2014

RELATIONSHIP BETWEEN THE EMOTIONAL INTELLIGENCE OF TEACHERS AND STUDENT ACADEMIC ACHIEVEMENT

David Allen Rust
University of Kentucky, davidrust@uky.edu

STUDENT AGREEMENT:

I represent that my thesis or dissertation and abstract are my original work. Proper attribution has been given to all outside sources. I understand that I am solely responsible for obtaining any needed copyright permissions. I have obtained needed written permission statement(s) from the owner(s) of each third-party copyrighted matter to be included in my work, allowing electronic distribution (if such use is not permitted by the fair use doctrine) which will be submitted to UKnowledge as Additional File.

I hereby grant to The University of Kentucky and its agents the irrevocable, non-exclusive, and royalty-free license to archive and make accessible my work in whole or in part in all forms of media, now or hereafter known. I agree that the document mentioned above may be made available immediately for worldwide access unless an embargo applies.

I retain all other ownership rights to the copyright of my work. I also retain the right to use in future works (such as articles or books) all or part of my work. I understand that I am free to register the copyright to my work.

REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's thesis including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

David Allen Rust, Student

Dr. Lars Björk, Major Professor

Dr. John Nash, Director of Graduate Studies

RELATIONSHIP BETWEEN THE EMOTIONAL INTELLIGENCE OF TEACHERS AND STUDENT ACADEMIC ACHIEVEMENT

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Education in the
College of Education
at the University of Kentucky

By

DAVID ALLEN RUST

Independence, Kentucky

Co-Director: Dr. Lars Björk, Professor of Educational Leadership
Co-Director: Dr. Beth Rous, Professor of Educational Leadership

Lexington, Kentucky

2014

ABSTRACT OF DISSERTATION

RELATIONSHIP BETWEEN THE EMOTIONAL INTELLIGENCE OF TEACHERS AND STUDENT ACADEMIC ACHIEVEMENT

Linda Darling-Hammond (1997) states that the classroom teacher is the most influential variable influencing student achievement outside of the child's home environment. Many studies have attempted to identify the specific attributes of teachers who are more effective than others. During the last decade, research has shown that teachers who work to develop relationships, while delivering relevant and rigorous instruction, demonstrate greater student achievement.

Additional studies from the world of business tell us that those individuals with increased levels of emotional intelligence are better leaders, managers and salespersons, and are more frequently hired into those positions by large corporations. They are more likely to get along with peers, be promoted and demonstrate success when working with others. A similar relationship may exist in the field of education between teachers who exhibit increased levels of emotional intelligence and their students' academic achievement.

This pilot study investigated possible relationships between the academic performance of sixth grade math students and the emotional intelligence of their corresponding teachers through the use of descriptive statistics. Although no significant findings were established, the data provide a useful starting point for future queries into this construct.

KEYWORDS: Social-Emotional Intelligence, Teacher Training, Teacher-Student Relationships, Teacher Dispositions, Student Achievement

David Allen Rust

Student's Signature

April 17, 2014

Date

RELATIONSHIP BETWEEN THE EMOTIONAL INTELLIGENCE OF TEACHERS AND STUDENT ACADEMIC ACHIEVEMENT

By

David Allen Rust

Dr. Lars Björk
Co-Director of Dissertation

Dr. Beth Rous
Co-Director of Dissertation

Dr. John Nash
Director of Graduate Studies

April 17, 2014

For Those Driven to Learn and Affect Change

Acknowledgements

I dedicate this dissertation, with love, to my wife Stacy and my four beautiful children, Kyler, Ashlyn, Danton, and Garrett, who endured as I labored through the program and this culminating piece of work. Their patience, encouragement and support will always provide me with the strength and courage to achieve more. I hope my work through this process will serve as a model, demonstrating resilience, determination and a strong work ethic so; they too, can consider and pursue their future goals.

I would also like to thank my parents, Al and Anita, who instilled in me, from a very early age, an unquenchable thirst for knowledge and the trust to be who I wanted to be, even as I still search for who and what that may eventually be. They allowed me to make my mistakes and learn from them. They demanded and showed me how to be ethical, respectful and trustworthy.

A very special thank you must go to my late grandfather, Frank Pohlman, who taught me the detail orientation to see the “nuts and bolts.” He reminded me that practice and patience worked hand in hand and were necessary to complete the puzzle. He taught me to ask the hard questions and never settle for a mediocre result.

I would like to thank the academic communities within which I have worked while pursuing this doctoral degree, particularly the hard-working teachers and administrative teams of the Boone County and Ludlow Independent School Districts. I am blessed to have been mentored and challenged by many knowledgeable, progressive and change-driven individuals. My desire to learn

and lead would never have evolved without their influence and the opportunity to serve as principal for Ludlow Middle School and Rector A. Jones Middle School during the past ten years. Specifically, I would like to thank Regina Brownfield, Melissa Lameier, and Jenny Cox, for they, as my friends, peers and confidants, struggled through this journey with me, providing much needed support and encouragement when it was needed most.

Finally to Doctors Björk, Hausman, Knoeppel, Rinehart, Rous and Scollay: without your courses, guidance and suggestions, this dissertation would have never come to fruition. I want you to know that your effort has transformed the way I think and helped me develop a “critical lens” through which to view the world. For this, I will be forever in your debt.

Table of Contents

List of Tables

Chapter One - Introduction

The Kentucky Educational Reform Act (KERA) of 1990 initiated sweeping instructional mandates for change ranging from state and school district management to the most basic level of teacher and student performance in the classroom. KERA promoted, and in most instances, mandated the creation of school based decision-making councils for the purpose of monitoring and implementing initiatives designed to promote student achievement. High stakes accountability placed massive responsibility on the shoulders of principals and classroom teachers to demonstrate academic results.

During the past 20 years, schools and school districts have worked to change the culture and management of their educational institutions based on the collective professional wisdom and newly generated research-based tools from within the Commonwealth and across the country. From district to district, student performance has generally increased during this period. Student achievement in math and reading at the secondary level however, continues to lag significantly behind elementary improvement (Education Trust, 2005).

Many schools, particularly those enrolling populations of students in lower socio-economic communities, struggle to make the same kind of instructional gains as those schools in more affluent neighborhoods. “The National Assessment of Educational Progress consistently reports that the average eighth grade minority student performs at about the level of the average fourth-grade white student” (National Center for Education Statistics, 2003). “Minority students are found all up and down the achievement scale, of course, but too many

remain lower down" (Barton, 2004, p.8). Educational researchers continue to look for ways to improve student achievement.

Linda Darling-Hammond (1997) states that the classroom teacher is the most influential variable influencing student achievement outside of the child's home environment. She also claims that "teacher expertise-what teachers know and can do-affects all the core tasks of teaching… their skill in assessing their students' progress also depends on how deeply they understand learning, and how well they can interpret students' discussions and written work" (p.16). McNulty and Quaglia (2007), in their work with the International Center for Leadership in Education, has examined some of the most successful high schools in the country- schools that have the challenges of poverty, mobility and diversity but still have high rates of student success. They note that, "in addition to the achievement gap, there is a participation gap, which is characterized by students who feel unwelcome, disconnected and lost in our schools" (McNulty & Quaglia, p.4). The relationship between student and teacher may be the answer to bridging these gaps.

Today, researchers hunt for the magic bullet that enables teachers to assess student needs and make relevant connections in order to better motivate and instruct students within their classrooms. However, the teacher effectiveness literature tends to focus narrowly on cognitive outcomes, with insufficient attention placed upon broader domains associated with student morale and social well-being, and the establishment of positive relationships with colleagues and parents (Campbell, Kyriakides, Muijs, & Robinson, et al., 2003). The

overreliance on nationally norm referenced testing of student cognitive/academic ability and the antiquated stand and deliver teaching methods have failed to meet the needs of most students. The recognition and management of emotional intelligence (EI) by classroom teachers may be the edge necessary to make effective and relevant connections with students of varying backgrounds and educational expectations. Salovey, Brackett and Mayer (2007) state that "emotional intelligence (EI) refers to the processes involved in the recognition, use, understanding and management of one's own and other emotional states to solve emotion-laden problems and to regulate behavior" (p. *i*). Bar-On, Maree, and Elias (2007) summarize what they call emotional-social intelligence as the following competencies:

> The ability to recognize and understand emotions and to express feelings nondestructively; the ability to understand how others deal and relate with them cooperatively; the ability to manage and control emotions effectively; the ability to manage change and the emotions generated by change, and to adapt and solve problems of a personal and interpersonal nature; and the ability to generate positive affect and be self-motivated (p. xiv).

Research into understanding the parameters and mastery of teacher emotional intelligence may lead to important findings about how emotional intelligence may be used by teachers to connect with and motivate students on a daily basis, potentially increasing student academic achievement. The definition of emotional intelligence capacities documented by Bar-On, Maree, and Elias and Bar-On's related EQ-i assessment was utilized for this study.

Statement of the Problem

School district personnel and building principals work feverishly to find, retain and professionally develop teachers who achieve results to meet the demands of high stakes accountability. McNulty and Quaglia (2007) note that relationships between teachers and students matter, particularly in those schools serving high risk populations.

Many studies over the past 20 years, particularly in business settings, indicate that emotional intelligence can help to identify employers and employees with affective skills capable of relating with and motivating others (Othman, Abdullah, & Ahmad, 2008; Rozell, Pettijohn, & Parker, 2006). Butler and Chinowsky (2006) claim that within construction organizations, emotional intelligence traits are just as important as previously used cognitive intelligence measures and experience to find and grow the capacity of future leaders.

These findings raise questions as to whether or not the emotional intelligence construct can transfer to the educational environment and help explain which teachers or prospective teacher candidates might be the most successful impacting student outcomes and help them target growth areas. The emotional intelligence of teachers may influence their effectiveness. If an emotional intelligence assessment can help identify which employees maintain affective skills capable of relating and motivating others in the business world then the possibility exists that emotional intelligence may help educational leaders develop teachers to excel in relating with students and motivating them to perform in schools. The problem is that no studies have been done to identify

whether or not differences in the emotional intelligence of teachers result in an enhanced ability to generate meaningful relationships with students resulting in increased academic benefits.

Purpose of the Study

The purpose of this study was to investigate the relationship between the emotional intelligence of teachers and the achievement of the sixth grade math students in their classrooms. Specifically, the study focused on the following question:

> What relationships exist between the measured emotional intelligence of sixth grade math teachers and the achievement of their students?

Significance of the Study

As an exploratory investigation, this question is important to study because it attempts to shed light on whether or not students of teachers with varying degrees of emotional intelligence demonstrate measurable differences in achievement scores. The current body of research does not provide any similar or replicable studies relating to this question. An answer to this question provides additional detail to the literature regarding teacher quality and effects and may inform future studies.

This question also helps to identify which, if any, of the specific composite scales or sub-domains of teacher emotional intelligence may associate to student achievement. It is, therefore, important to identify specific components of emotional intelligence and the individual relationships each may have with student achievement.

As noted previously, education professionals continue to seek answers clarifying the effects and measures of quality teachers. If a teacher's emotional intelligence can be related to student academic gains, professional growth and instructional practices may be modified and enhance teacher efficacy. Colleges and universities could modify teacher preparation courses to include emotional intelligence and its subdomains as part of the knowledge and skill base for new teachers. School districts could consider utilizing emotional intelligence assessments to inform professional development needs of pre-service teachers and teacher interns once hired into the field.

For more experienced teachers currently practicing in the field, a successfully articulated and measured relationship between teacher emotional intelligence and student achievement could lead to the use of emotional intelligence instruments to inform professional growth by identifying areas of strength or weakness for development to improve the quality of teacher social interactions. Hence, the goal of this study is to serve as a pilot to inform future investigations into this possible construct.

Chapter Two – Literature Review

A substantial body of research indicates that student achievement is affected by meaningful and purposeful relationships between teachers and students (Brophy & Good, 1974; Coleman, et. al., 1966; Klem & Connell, 2004; McNulty & Quaglia, 2007), while inappropriate or negative relationships can hinder student performance and a feeling of worth in the classroom (Brophy & Good, 1974). The emotional intelligence research conducted over the past 20 years makes arguments for the use of emotional intelligence assessments to identify, hire, grow and promote employees within corporate America (Carmeli & Josman, 2006; Dearborn, 2002; Dulewicz & Higgs, 2003; Goleman, Boyatzis, & McKee, 2001). Additional research has investigated the similar concept of emotional labor and the employee division of labor and expectation that exists for those individuals who interact with the public (or clients) and those who only interact with others within the organization itself (Meier, Mastracci, & Wilson, 2006; Othman et al., 2008). However, research into the relationship between teacher emotional intelligence and student achievement is nonexistent.

Researchers have conducted only a few relevant investigations on emotional intelligence in the field of education during the past ten years. The most recent and relevant studies focus on either the emotional intelligence of students and its resulting potential relationship with achievement (Downey, Mountstephen, Lloyd, Hansen, & Stough, 2008; Stottlemyer, 2002) or the emotional intelligence of teachers and pre-service teachers as workers or potential workers (Drew, 2006). There has not been, however, a single report of

teacher emotional intelligence and any direct connection or relationship with student achievement.

This study addresses a potentially meaningful gap in education research when one considers the available evidence on the significance of student and teacher relationships, the research establishing positive effects of emotional intelligence in the corporate sector, and the scarcity of research into the relationship between teacher emotional intelligence and student outcomes,.

This review of the literature begins with a discussion of the history of the construct of emotional intelligence followed by an examination of emotional intelligence as it has been utilized by corporate America. Secondly, this review reports on the research relating teacher relationships to student success in the classroom. Finally, it concludes by discussing the potential role of the emotional intelligence of teachers for promoting student achievement in our schools.

History of Emotional Intelligence

Several contemporary theorists have generated models to investigate and describe an individual's emotional intelligence. The definition of emotional intelligence has evolved over the course of the past 20 years due to intensive research and reporting. The most widely known researchers, Peter Salovey of Yale University, John D. Mayer of the University of New Hampshire, Daniel Goleman of Harvard and Reuven Bar-On of the University of Texas, have provided several different definitions and models of emotional intelligence, and all trace their roots from the works of Edward Thorndike and Howard Gardner.

Edward Thorndike, the psychologist who articulated and publicly defended the intelligence quotient (I.Q.) in the 1920s and 1930s, “proposed that other types of abilities existed and needed to be differentiated from general intelligence. Thorndike’s main focus was to suggest that the understanding and perception of one’s personal feelings, as well as those of others, was a type of intelligence distinguishable from one’s general intelligence” (Rozell, Pettijohn, & Parker, 2006, p. 115). Thorndike proposed that social intelligence was itself an aspect of a person’s IQ (Goleman, 1995, p. 42). However, the idea of social intelligence, its definition, and thorough investigations were neglected for many decades.

Howard Gardner, in his 1983 book, *Frames of Mind,* expanded the concept of IQ to include what he calls the Multiple Intelligences Theory. Gardner proposes that the brain acquires knowledge and skill in different ways, through different modes, which vary from individual to individual. His theory of multiple intelligence includes seven domains: linguistic, musical, spatial, logical-mathematical, bodily-kinesthetic, inter and intra personal. He states that inter and intra personal relationships form the basis for the construct of emotional intelligence (Gardner, 1998). In 1983, Gardner opened the floodgate for the consideration that the mind, and humans in general, learn and interact in a multitude of ways. Like Gardner, other researchers began considering how humans learn and demonstrate knowledge and skills. Emotional intelligence evolved as a construct and serious investigation into its usefulness intensified during the 1990s. This link is even more important as Gardner’s ideas relating to

multiple intelligences continue to filter into mainstream educational thought and classroom lesson implementation.

Emotional intelligence as a definition and construct continues to develop. Generally, “Theorists are interested in identifying the mental processes which involve emotional information, including appraising, expressing and regulating emotions in self and others, and using the emotions in adaptive ways” (Finegan, 1998, p. 9). Salovey and Mayer’s original definition of “Emotional intelligence (EI) refers to the processes involved in the recognition, use, understanding and management of one’s own and other emotional states to solve emotion-laden problems and to regulate behavior” (Salovey, Brackett, & Mayer, 2007, p. *i*).

They have since revised their own definition, stating, “Emotional intelligence involves, [1] the ability to perceive accurately, appraise, and express emotion; [2] the ability to access and/or generate feelings when they facilitate thought; [3] the ability to understand emotion and emotional knowledge; and [4] the ability to regulate emotion to promote emotional and intellectual growth” (Salovey & Mayer, 2007, p. 35). This expanded definition from Salovey and Mayer stretched across a void to connect the idea of intelligence with the recognition that emotion and its regulation affects a person’s growth and interactions with other individuals.

The first of these four dimensions is the ability to perceive, appraise and express emotion as measured by a respondent's attention to a variety of non-verbal cues such as tone of voice, posture, and facial expressions in oneself and others. The second dimension is the ability to use emotions to facilitate thinking

and behavior, focusing on how emotions influence our cognitive system. This dimension involves using intuition or “gut-feelings” to help make decisions and be creative. The third dimension is the ability to understand and use emotional knowledge (Mayer, Salovey, and Caruso, 2002) through an understanding of what has led to the experience of an emotion and is an essential component of emotional intelligence. One needs to know how emotions change and combine over time to effectively use this emotional knowledge. The fourth dimension is the ability to manage and regulate emotions. Individuals who are high in this dimension are usually very calm, not impulsive, and work well under pressure. They can typically respond to stressful situations without emotional outbursts (Bar-On & Parker, 2000).

Bar-On, Maree, and Elias (2007) add a separate layer of understanding and summarize what they call emotional-social intelligence as the following competencies:

- “The ability to recognize and understand emotions and to express feelings nondestructively.
- The ability to understand how others deal and relate with them cooperatively.
- The ability to manage and control emotions effectively.
- The ability to manage change and the emotions generated by change, and to adapt and solve problems of a personal and interpersonal nature.
- The ability to generate positive affect and be self-motivated” (p. xiv).

Reuven Bar-On claims that “people who are emotionally and socially intelligent are able to understand and express themselves, to understand and relate well to others, and to successfully cope with the demands of daily life” (Bar-On, 2007, p. 2). Bar-On’s model, although very similar in definition to others, seems to make the distinction from a personal understanding and regulation to that of implementation for management of inter and intrapersonal relationships. Bar-On exemplifies this by adding that those scoring high in emotional intelligence are better equipped to effectively manage change by flexibly coping with situations of an interpersonal nature (Bar-On, 2007).

Bar-On (2007) promotes the study of social and emotional intelligence through an educational application. He is credited with creating one of the most commonly used instruments for measuring emotional intelligence, the EQ-i (Brown, Bryant, & Reilly, 2006). Many studies have utilized the EQ-i to assess a person’s intrapersonal and interpersonal competencies, stress management, adaptability, and general mood. For the purposes of this study, the researcher utilizes Bar-On's construct of emotional intelligence as assessed via the EQ-i.

Emotional Intelligence in the Business Sector

In 1990, Daniel Goleman (1995), the Harvard trained psychologist serving as a science reporter for the New York Times, reported on a journal article written by Peter Salovey and John Mayer with the coined phrase of emotional intelligence. Goleman was so intrigued by the concept that he brought it to the world’s attention through his own book and New York Times bestseller, *Emotional Intelligence*. Within his book, Goleman (1995) “suggests that

emotional intelligence, the skills that help people harmonize, should become increasingly valued as a workplace asset in the years to come“ (p. 160).

Since that time, many studies have come to the forefront supporting the application of emotional intelligence in business settings. In fact, Goleman’s research “at nearly 200 large, global companies revealed that emotional intelligence-especially at the highest levels of the company-is the sine qua non for leadership. Without it, a person can have first-class training, an incisive mind, and an endless supply of good ideas, but he still won’t make a great leader” (Goleman, 1998, p. 2). Jack Welch, former CEO of General Electric, stated:

> Finally, a misstep we've both taken is hiring a candidate who's smart and capable but just too lacking in emotional intelligence... occasionally you bump into a talented and competent candidate, as we did not long ago, who's so lacking in the EQ components of humility and realness that you can't take a chance. (Welch & Welch, 1998, p. 1)

Additional research provides support for Goleman’s claim that emotional intelligence relates to success in business. Carmeli and Josman, in a 2006 study, examined the relationship between emotional intelligence and two aspects of work outcomes, task performance and two forms of organizational citizenship behaviors, altruism and compliance. Their study, unlike many others, avoided self-report scores by utilizing evaluator ratings of performance. They found evidence for specific links between employee emotional intelligence and work outcomes (Carmeli & Josman, 2006, p. 414). Specifically, the study found that the regulation of emotions in the work place was significantly and positively

related to the outcomes of task performance, altruism, and compliance (Carmeli & Josman, 2006).

Businesses currently recognize the importance of emotional intelligence competencies as they exist and are utilized on a daily basis. “Key contributors not only possess information and ideas, but more importantly, they have the ability to effectively utilize social networks within the organization. People want to discuss, learn, and collaborate with them because of their ability to build on, develop others, self-manage, listen, share information, and understand” (Dearborn, 2002, p. 524). Giles, (as quoted in Carmeli & Josman, 2006) “found evidence for a positive correlation between subordinates’ commitment to the organization and their supervisors’ emotional intelligence” (p. 407).

Dulewicz and Higgs of the Henley Management College conducted a thorough investigation into the emotional intelligence of business leaders and board members in the United Kingdom. Dulewicz and Higgs (2003) utilized a job competencies survey measuring both emotional intelligence (EI or EQ) and IQ through 40 different competencies. In addition to the questionnaire, the participants provided information about their job level, responsibilities, the number of levels between them and their CEO, and the number of staff for whom they were responsible. Ratings of their job performance were also included. Multiple regressions were conducted on each of the competencies to determine which were the most important in determining organizational advancement. The researchers found that IQ plus EI (EQ) results in success. “It was found that the IQ competencies accounted for 27%, quite close to Goleman’s own estimate.

EQ accounted for over one third of the variance, 36%... of advancement" (Dulewicz & Higgs, 2003, p. 196).

In 1996, the Rohm and Haas Company embarked on an endeavor to create a coaching program utilizing the practice of emotional intelligence to groom promising employees for the top 30 to 40 leadership roles in the company. "Rohm and Haas senior executives have come to value the role of psychology-and specifically, the role of emotions in the behavior of successful leaders" (Wasylyshyn, Gronsky, & Haas, 2006, p. 66). The authors conducted a survey to determine the effectiveness of the company's emotional development program. The results indicated sustained learning and behavior change among program participants over an extended period (Wasylyshyn et al., 2006). Daniel Goleman (1995) sums up the emotional intelligence and business connection with a quote from his book, *Emotional Intelligence*, "as Shoshona Zuboff, a psychologist at Harvard Business School, pointed out to me, corporations have gone through a radical revolution within this century, and with it has come a corresponding transformation of the emotional landscape" (p. 149).

Some research indicates that identifying leadership should not be the only use for emotional intelligence in business settings. Researchers Rozelle, Pettijohn, and Parker (2006) investigated the impact of the emotional intelligence of salespeople on sales performance. One hypothesis states "The highest levels of performance will be achieved by salespeople who have [EI] combination scores placing them in the group with the highest positive affect and lowest negative affect group" (p. 115). The researchers argue that a

salesperson must be able to separate himself or herself from negative results through the self-control and self-awareness of feeling, particularly when faced with rudeness or rejection on the job (Rozell et. al., 2006). The researchers specifically found:

> When the overall emotional intelligence scale was used as the independent variable, it was found that those salespeople in the highest performance category had mean emotional intelligence scores that were significantly greater than the scores of those occupying the lowest performance group ($F = 3.62$, $p < 0.05$). Significant results were also found when the individual emotional intelligence factors were used as the independent variables. (p. 116)

Emotional Intelligence and Emotional Labor

Several researchers have connected emotional intelligence to a discussion of emotional labor and their relationships to workplace effectiveness. Othman, Abdullah, and Ahmad (2008) discuss the fact that certain jobs in the workplace require the display of a specific emotion to be successful and that workers should be specifically hired and placed in positions to demonstrate this emotional labor. “Emotional labor is the projection of feelings and emotions needed to gain the cooperation of clients or coworkers, the ability to see another’s side of the issue and integrate that perspective into what the organization does” (Meier, Mastracci, & Wilson, 2006, p. 899). Othman, et. al. (2008) contend that employees who can perceive, understand, and regulate

emotion in self and others would be able to achieve higher performance in their job.

Effectively, these researchers claim that jobs can be divided among those requiring high, medium, and low emotional labor and that most professional jobs requiring personal interaction, teamwork or public-relations necessitate high emotional labor. Othman, el.al. (2008) argue that professional service providers deal with specific, customized needs of clients and require the deliberate use of EI abilities to better serve customers and achieve high career roles. For the purpose of this study, one could argue that teachers participate in a profession that requires high emotional labor. Acquiring and dispensing appropriate EI skills may allow teachers to better serve students, parents and the community, who could ultimately be portrayed as their clients.

Meier, Mastracci and Wilson (2006) examined the connection between emotional intelligence and emotional labor through studies in the private and public service industries. They hypothesize that employers, with greater emotional labor expectations of their employees, will have more effective interactions with clients, better internal relationships, and superior program performance and add that “emotional intelligence, in Goleman’s view, is the management of emotional labor so that it benefits the organization” (p. 899).

Importance of Teacher Quality and Building Student Relationships

From the writing of *A Nation at Risk* (1983) to the passage of No Child Left Behind and the publishing of *Breaking Ranks II* (2004), the community, legislators, and school administrators have come to realize the keen importance

of having highly trained and effective teachers in every child's classroom. In addition, we now recognize that the importance of relationship building between students and teachers as a variable that cannot be overlooked any longer.

McNulty and Quaglia (2007) claim that "schools across the country are realizing that rigor and relevance develop most naturally when they are cultivated on firm grounding in relationships …if there is not a high level of positive relationships, students will not respond to higher expectations" (p. 3). Helm (2007) adds that teachers with the right dispositions can be the keys to reach students from at-risk and under-privileged environments. She further quotes a study by Harme and Pianta which "found that students with significant behavior problems in their early years are less likely to have problems later in school if their teachers are sensitive to their needs and provide frequent, consistent, and positive feedback" (p. 109). Whitfield and Klug (2004) promote the idea of teachers as healers in the classroom and note that schools must hire and grow teachers who can promote success for all students, including those who struggle in traditional school settings. These statements emphasize the need for teachers and administrators to recognize that teacher quality and effectiveness does not lie entirely in core subject training and years of experience but also in the application of the affective domain to reach the emotional dispositions of children to better connect and motivate their achievement.

Andy Hargreaves (2000) claims that educators must look seriously at students' emotions, conditions and expectations, and learn to 'read' students over time. This reading of students may help to inform teachers' decisions with

instruction, classroom management and assessment. Those teachers who are better able to understand their own and students' needs may be better suited to initiate those actions, which promote student success.

Ang (2005) conducted a study to validate the teacher-student relationship inventory (TSRI) which she developed. While approaching her study, Ang noted that a student's academic and behavioral adjustment may be positively influenced by a satisfactory teacher-student relationship. Her goal was to create a short 14-question survey administered to teachers for identifying the quality of teacher-student relationships. She found, after conducting a multiple regression analysis with her three TSRI factors (satisfaction, instrumental help, and conflict) that instrumental help and conflict could predict students' academic achievement scores.

> Findings from the present study provide additional support that positive teacher-student relationships continue to be influential in predicting older elementary and middle school students' behavioral and academic outcomes. Having a positive and satisfactory relationship with one's teacher and a relationship that is free from conflict and negative exchanges is associated with lower levels of [student] anger and aggression. Furthermore, willingness to approach the teacher for help and to view the teacher as a resource person is predictive of academic achievement. Absence of conflict and negative interaction within the teacher-student relationship is also predictive of academic success (Ang, 2005, p. 70).

These studies demonstrate that effective teacher-student relationships promote academic performance within the classroom yet they still fail to identify the specific competencies teachers utilize to build relationships and motivate students. Worley, et al. (2007), provides some insight through a discussion of teacher communication and classroom effects. Their goals were to "describe how award-winning teachers (a) understand the ebb and flow of the classroom, (b) use a wide repertoire of communication skills, (c) create relationships with students, and (d) effectively manage their classroom climates" (p. 207). The researchers found that teachers participating in their study regularly allow spontaneity to drive instruction and that learning is at its best when students have an opportunity to take ownership and apply the content to their own experience. Building relationships with students remains a core principle.

"Virtually all of the teachers in this study engage students in rapport-talk, a term coined by Deborah Tannen (1994) to describe communication of shared experiences in order to establish interpersonal rapport" (Worley, et al., 2007, p. 220). The researchers added, "these excellent teachers were interpersonally aware and responsive, thereby encouraging open, warm, and communicatively confirming climates that willingly invited students' comments, questions and responses" (p. 220).

Emotional Intelligence and Student Achievement

Emotional intelligence, as a model for influencing student achievement, is a construct that has not been adequately studied to date. One study investigates the emotional intelligence of pre-service teachers and their success in student

teaching (Drew, 2006) while an Italian study (Fabio & Palazzeschi, 2008) considers the self-efficacy of teachers and their resulting emotional intelligence. The goal of this review and ultimately the related pilot study is to better understand and explore the possibility that teachers, who maintain high levels of emotional intelligence, are better able to motivate student achievement in the classroom. The rationale for how teacher emotional intelligence and the corresponding subdomains may influence teacher effectiveness is described below and summarized in Appendix B.

The following argument frames the connection between this literature review and justification for the related study. Studies indicate that students perform better in classrooms instructed by teachers who make relational connections with them. Achievement increases when students know that teachers care and demonstrate interest (McNulty & Quaglia, 2007). Studies into emotional intelligence in the workforce indicate that employees with higher levels of emotional intelligence and emotion regulation relate better with their peers (Goleman, 1995), report lower levels of stress, interact better with their clients and community (Meier, et.al., 2006), and have a higher rates of task performance, compliance, and altruism (Carmeli & Josman, 2006). Therefore, this study explores the possible relationship between the emotional intelligence of a teacher, as a worker, and their students' outcomes, such as achievement on criterion-referenced or norm-referenced tests.

Reuvan Bar-On has not formally studied nor published reports describing the relationships between the emotional intelligence of teachers, teacher

characteristics or relational outcomes. However, a question can be raised about the possible alignment of Bar-On's emotional intelligence composite scale subdomains and teacher characteristics. Each of the five Bar-On composite scales may define specific teacher emotional attributes conducive to student learning.

Composite scale one- intrapersonal relationships: a teacher who maintains a strong intrapersonal dimension may better understand his or her own emotional needs and triggers. Understanding this may enable the teacher to modify appropriately his or her own emotions to address situational needs. For example, this teacher may be less emotionally charged by student misbehavior occurring in the classroom. The teacher may be less likely to react to a student attempting to "push buttons" in an effort to escalate an emotional situation. Dr. Clyde Winters (2009) quoted Dr. Robert Brooks (1996) stating:

> Brooks has made it clear that a teacher's empathy and emotional intelligence can help that teacher work more effectively with angry and resistant students. Understanding what a student is going through helps a teacher to recognize the burdens many students experience at home and at school that lead to misbehavior, and the ability to create strategies that can make these students less angry and resistant (pg. 2).

The emotionally intelligent teacher may better identify the antagonizing factors of a situation, be less likely to "take the bait" and capable of de-escalating or deflecting a situation by controlling or managing emotions.

Composite scale two of Bar-On's emotional intelligence construct is interpersonal relationships. This scale may define a teacher maintaining strong interpersonal relationships who identifies the personal and group needs of students. For example, if the teacher is aware of others' feelings he may better relate with students as a result. High interpersonal relationships may allow teachers to work with parents, administrators and other teachers to grow professionally. Student achievement may increase as a result of teachers working collaboratively.

Composite scale three of Bar-On's emotional intelligence construct is stress management. As an example, teachers demonstrating high stress management capacities may be better able to deal with the never ending responsibilities of their role, the reactionary tendency of dealing with student misbehavior, the weight of high stakes accountability, and parent complaints. Successful teachers, scoring high in this category, may be less likely to react angrily or shut down from the stress of the classroom. Teachers demonstrating greater stress management skills may be more approachable for students and more reflective on their work, both leading to higher student achievement.

Composite scale four of Bar-On's emotional intelligence construct is adaptability. Teachers performing well within the adaptability dimension may respond better to individual student needs and learning styles. These teachers may be better differentiators of instruction, better problem solvers and more likely to take risks for student benefit. These teachers might cope readily with the changing nature of schools and schedules. The students in these classrooms will

benefit from instruction specifically related to the environment, the complex curriculum and individual emotional needs.

Composite scale five of Bar-On's emotional intelligence construct is general mood. Teachers demonstrating a greater general mood may be more optimistic and happier than their peers. Students instructed by these teachers may be more confident and likely to take chances. These students may demonstrate greater academic performance due to increased teacher support and the reinforced confidence in student ability.

Researchers of emotional intelligence have begun to recognize the potential for their studies and the connection with student achievement, although little empirical research exists to this end.

> "Few would disagree that the purpose of schools is to promote academic skills and knowledge and to take students from one level to the next. However, that is difficult to accomplish if the student is absent; if the student is suspended or expelled; if the student is dropping out of school: if the student is dealing with a death; if the student believes that life is something that happens to him and he has no control over it…To get these students to their next academic levels, we must meet them where they are and give them the skills and resources to cope with stressors so that they will then be better able to attend to academics. Without these social/emotional skills, the stressors take over and prevent our students from living up to their academic potential" (Salovey & Mayer, 2007, pp. 57-58).

Several studies consider emotional intelligence and its potential connection in the classroom. For example, one study investigated the relationship between student emotional intelligence and student achievement. Australian researchers “examined the relationship between emotional intelligence and scholastic achievement in Australian adolescents… and found academic success to be satiated with higher levels of total EI, via assessment of the EI of different academic levels [of students]” (Downey et al., 2008, p. 10). A dissertation documented the relationship between emotional intelligence of pre-service student teachers and their success in student teaching. Drew (2006), in his study, found some evidence indicating that emotional intelligence may eventually be a useful conceptual tool to predict student teacher performance informing the future selection of educators.

An Italian study considered the emotional intelligence of teachers and the relationship with self-efficacy. The researchers utilized the Bar-On EQ-i and the Ohio State Teacher Efficacy Scale. The study did not consider student achievement but did report on teacher efficacy and emotional intelligence. Fabio and Palazzeschi (2008) found that “Higher emotional intelligence was linked to higher teacher self-efficacy in the capacity to manage the classroom, motivate and involve students, and use appropriate teaching strategies” (p. 322). This study is important because it demonstrates that teacher effects and emotional intelligence may have a key connection to student outcomes.

Measuring Emotional Intelligence

One limitation of early literature on emotional intelligence is that the definitions of the concept are vague. Emotional intelligence has been viewed as a multi-dimensional construct, however, it is unclear which dimensions should be included and which dimensions predict success, whether in personal relationships, business, education, etc. Further, there is a lack of reliable and valid measurement for the models proposed for emotional intelligence (Zeidner, Matthews, & Roberts, 2001).

The *Encyclopedia of Applied Psychology* (Spielberger, 2004) suggests there are three major conceptual models of emotional intelligence. The first is the Salovey-Mayer model (Mayer & Salovey, 1997). This model defines the construct as the ability to perceive, understand, manage and use emotions to facilitate thinking, measured by an ability-based measure (Mayer & Salovey, 1997). The second is the Goleman model (1998), which views this construct as various competencies and skills that drive managerial performance and are measured by multi-rater assessments (Boyatzis et al., 2001). The third conceptual model of emotional intelligence is the Bar-On model (Bar-On 1997, 2000). This model describes a cross-section of interrelated emotional and social competencies, skills and facilitators that affect intelligent behavior. It is measured by self-report within a potentially expandable multi-modal approach including interview and multi-rater assessment (Bar-On & Handley, 2003).

Reuven Bar-On began the development of the EQ-i in 1983 by examining various factors of effective emotional and social functioning. These factors, or

components, were ultimately intended to contribute to an individual's psychological well-being. This lengthy process became known as a multi-factorial approach and analysis. It led to the development of a very complex construct through a multi-step process. It involved identifying several key factors related to effective emotional and social functioning, providing operational definitions for these factors, and constructing a psychometric instrument (inventory) and norming and validating the instrument across cultures (Bar-On, 2004).

Several researchers have focused on developing psychometrically sound measures to assess these relevant abilities. Mayer and colleagues (2002) developed a performance-based measure where respondents solve emotion-related problems. This measure, known as the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) produces a separate score for each of the four dimensions and gives a total emotional intelligence score. The MSCEIT instrument is deployed primarily as emotional intelligence ability measure (Day & Carroll, 2007).

Bar-On uses a self-reported measure; the most frequently used and readily available measure of emotional intelligence (Day & Carroll, 2007). Using 125 items, the instrument includes five scales: intrapersonal (including subscales like recognizing and understanding one's feelings, interpersonal (including subscales such as empathy), adaptability (including subscales of being able to adjust one's emotions and behaviors to changing situations and conditions), stress management (including subscales like resisting or delaying an impulse), and general mood (measuring optimism and happiness) (Bar-On, 2007).

A study leading to the use of the EQ-i investigated the emotional intelligence of 349 pre-service teachers, examining their anger expression through the use of the Permanent Anger Expression Style Scale and correlating the results of the teachers' performance on the Bar-On's EQ-i (Sahin-Baltaci & Demir, 2012). Sahin-Baltaci and Demir (2012) found that pre-service teachers demonstrating emotional intelligence skills were better able to control their anger in a situation rather than suppressing or reflecting it. This outcome and the use of the EQ-i with pre-service teachers promoted its use in this exploration.

To best understand the Bar-On model of Emotional Social Intelligence, one must understand the Emotional Quotient Inventory (the EQ-i). This has played an important role in developing the Bar-On model. The Bar-On model is operationalized by the EQ-i. The EQ-i is a self-report measure of emotionally and socially intelligent behavior, which provides an estimate of emotional-social intelligence. This measure was the first of its kind to be published by a psychological test publisher and was also the first to be peer-reviewed in the *Buros Mental Measurement Yearbook* (Plake & Impara, 1999). It is one of the most widely used measure of emotional-social intelligence to date (Bar-On, 2004; Perez, Petrides & Furnham, 2005) and "covers the sampling domain of trait EI better than many other inventories" (Perez, et.al., p. 129). As a result of these factors, it is the instrument used to assess emotional intelligence in this study.

Bar-On (2004) presents his concept of emotional and social intelligence as a “multifactorial array of interrelated emotional, personal, and social abilities influencing our overall ability to actively and effectively cope with daily demands

and pressures" (p. 385). He asserts emotionally intelligent people are able to recognize their emotions and act on them appropriately. They have a positive self-regard, understand the way others feel, and are capable of establishing and maintaining mutually satisfying interpersonal relationships (Bar-On, 2004). Currently, Bar-On's emotional intelligence model is considered one of "the clearest and the most comprehensive to date" (McCallum & Piper, 2000, p. 125).

The Bar-On EQ-i has been translated into over twenty languages, with a collection of normative data in more than fifteen countries and a multitude of reliability and validity studies (Bar-On & Parker, 2000). The overall average internal consistency coefficient (Cronbach's alpha) is .76 across seven countries examined at one time, which is considered high reliability (Bar-On, 2002). Testing results also indicate the instrument is valid.

The EQ-i has been administered with various measures of cognitive intelligence in an effort to examine the construct validity of the Bar-On model. These cognitive measures include the Wechsler Adult Intelligence Scale, the Progressive Raven Matrix, and the General Adult Mental Ability Scale. These were administered to a total of 4,218 individuals in six studies (Bar-On, 2004). The results found only minimal overlap between the EQ-i and tests of cognitive intelligence, which was expected, given the Bar-On instrument was not designed nor intended to assess cognitive intelligence. David Van Rooy and colleagues also confirmed this finding and suggest that no more than 4% of the variance of the EQ-i can be explained by cognitive intelligence (Van Rooy & Viswesvaran, 2004). These findings indicate emotional-social intelligence and cognitive

intelligence are not strongly related and are most likely separate constructs (Bar-On, 2004; Van Rooy & Viswesvaran, 2004). A comprehensive description of the psychometric properties of the instrument and how it was developed can be found in the *Bar-On Emotional Quotient Inventory- Technical Manual* and in Glenn Geher's book, *Measuring Emotional Intelligence: Common Ground and Controversy* (2004).

Contradictory evaluations of the EQ-i do exist. One study warns against participants possibly "faking" answers to receive elevated scores on the EQ-i. A study conducted by Day and Carroll (2008) indicate that college-age, student participants were able to significantly increase their scores on the EQ-i when motivated to do so. They further added that the study did "not answer the question of whether faking decreases the predictive validity of the EQ-i."

An additional study, comparing the use of the MSCEIT and EQ-i to predict the emotional intelligence of prospective accountants in the corporate hiring process concluded that neither instrument was clearly better than the other and that both required revisions to be used for this purpose. Nicholls, Wegener, Bay and Cook (2012) claim that potential job candidates were able to purposely alter their scores to fit a job description and make their application appear stronger.

This review takes into account the important part played by emotional intelligence in America's workforce and potential for consideration in America's schools. Corporate executives now realize how important it is for their employees and managers to recognize, control and manipulate emotional inputs and outputs, especially when dealing externally with clients. Hargreves (2000), Helm

(2007) and McNulty and Quaglia (2007) suggest that the relationships between students and teachers matter and will likely lead to higher student achievement, particularly for those students from at-risk backgrounds. To add to the current literature researchers must discover whether or not a teacher's emotional intelligence or specific subdomain therein, can help indicate success in motivating students to achieve at high levels. The following chapter will present methodology, results and a discussion of possible relationships.

Chapter Three- Research Methods

Introduction

The purpose of this study was exploratory in nature, to investigate the relationships between the emotional intelligence composite scales and sub-domain scores of teachers and the achievement of their sixth grade math students.

This chapter provides an overview of the research methods undertaken for this study. This includes a discussion of the design, followed by the setting and context of the study. Information will be provided on the population sample and sources for the data and will conclude by discussing the instruments, procedures and data acquisition methods necessary to conduct the study.

Research Design

Exploring the question of this pilot study required the use of descriptive statistics, particularly through the calculation and interpretation of means, ranges and standard deviations, across individuals and groups of teachers and students. According to Morgan, Reichert, & Harrison (2002), the most basic information, reported as measures of central tendency, is often the most useful. This study investigated differences in emotional intelligence of teachers and relationships that might exist with math gain scores of their students. Students were not randomly selected nor were different controlled, experimental treatments applied.

To consider relationships between the math achievement of students and their teachers' measured emotional intelligence, the researcher focused on sixth

grade, middle school, math teachers and their corresponding students in one Midwestern school district to frame the study and report outcomes.

Research Setting and Context

This study was conducted during the 2008-2009 school year within a large suburban, Midwestern, public school district serving residents near a major metropolitan city. This large suburban school district will be referred to as Cherokee County Schools for purposes of this study. According to the 2006 United States Census, the county was home to 110,000 residents, 94% of whom were white and 3% of whom were African American. The median income of households within the county was $56,477. The median age was 33 years old and in 2006, 90% of people 25 years and over had at least graduated from high school while 25% had a bachelor's degree or higher.

Specifically, the study included teachers and students from four of the district's middle schools. The district serviced 18,225 students with 3,200 school employees during the 2008-2009 school year. The district was one of the largest school district in the state. The district maintained five middle schools with enrollments ranging from 650 to 992 students, all with grades spanning six through eight. According to the October 2008 district attendance data, the five middle schools enrolled 4,036 students with 28.4% eligible for free and reduced lunch. Within the five middle schools, 90% of students were designated as white, and not of Hispanic descent. Ten percent of the remaining student demographic were designated with minority status including all ethnic and racial statuses other than that of white and non-Hispanic descent. One middle school, with an

enrollment of 642 students and a free-reduced lunch percentage of 67% was omitted from the study for having a significantly higher percentage of free and reduced lunch students in addition to being the researcher's home school.

According to the 2008-2009 district report card, available through the state department of education, the district spent $7,568 per student and maintained a student-teacher ratio of 17:1. The report card indicated that the district maintained an average of 3.5 students per each of the internet-connected computers. Classroom teachers in the district averaged 11.6 years of experience. Twenty-two percent of teachers held Bachelor's degrees, while 59.4% held Master's degrees, and 18.6% earned Rank I (30 hours past Master's) or Doctoral degrees.

Research Sample

Data were collected from participating sixth grade math teachers and matched with existing student data, which were provided by the school district. The target population of teachers included 15 sixth grade math teachers. The study was limited to these teachers in an attempt to isolate similar data. All middle schools in Cherokee County utilize the same Ed Performance assessment for progress monitoring. This test was not utilized in any of the surrounding school districts for inclusion of their math teachers. In addition, all middle school math teachers in Cherokee County followed similar curriculum and targeted learning outcomes. Sixth grade math teachers were specifically chosen for several reasons. Six grade math was a departmentalized subject in Cherokee County, meaning that students received only math instruction from their

corresponding teacher, contrary to some elementary (grades kindergarten - fifth) where students may receive multiple subject instruction from individual teachers. In addition, sixth grade math, in contrast to succeeding secondary math courses in grades seven through twelve, were more likely to heterogeneously grouped and not leveled nor ability grouped. Finally, math as a course subject was selected because there was less instructional influence of other teachers into the yearly gain score earned by students. This is in contrast to student reading achievement which could be heavily influenced by other teachers who incorporate outside text or reading into their instruction. This would be likely in a social studies or science classroom.

To be eligible for selection, teachers taught normally-scheduled and departmentalized sixth grade math classes, or mainstreamed special education math classes, which could contain students served by special education. The classes, however, could not be scheduled as resource-only special education classes. Of that population, eight teachers agreed to participate in the study, seven female and one male teacher, ranging in age from 26 to 61 years old. Table 3.1 presents teacher demographic data.

Table 3.1

Teacher Demographics

Teachers	Gender	Age	Education Rank	Certification	Years of Experience
Teacher A	Female	42	2	1-8	20 +
Teacher B	Female	29	2	5-9 Math	5-10
Teacher C	Female	61	2	1-8 & Reading	20 +
Teacher D	Female	46	1	1-8	20 +
Teacher E	Female	53	2	1-8	20 +
Teacher F	Male	44	1	K-4, 5-8 Math	20 +
Teacher G	Female	26	3	5-9 Math/Science	0-5
Teacher H	Female	51	2	K-4, 5-8 Math	10-20

Two teachers in this study maintained rank one status. Teachers earn rank one status upon completing 30 or more hours of approved college credit hours above a master's degree. Five teachers held rank two status which is awarded to teachers with a master's degree. One teacher, the least experienced, maintained rank three status, indicating a lack of a master's degree.

The student population from which the study sample was drawn included 1,470 sixth grade students in the Cherokee County School District. Criteria for inclusion in this study sample were students taught (1) by participating teachers, and (2) in departmentalized, regular education settings. This resulted in a sample of 717 students, 355 (49.5%) of which were male and 362 (50.5%) female. Of the

717 students, 8.5% (n = 61) were served by Individualized Education Plans (IEPs), indicating they qualified for special education. Twenty-five (0.3%) of the special education students were female and 36 (0.5%) were male. Additional demographic information on students was not released or available for analysis from the school district. Table 3.2 depicts the student sample for the study as disaggregated by teacher.

Table 3.2

Student Demographics

Teachers	# Students	Male	Female	Special Education
Teacher A	122	63	59	18
Teacher B	82	46	36	13
Teacher C	98	50	48	1
Teacher D	77	38	39	6
Teacher E	96	42	54	5
Teacher F	94	48	46	13
Teacher G	73	33	40	3
Teacher H	75	35	40	2
Total	717	355	362	61

Instruments and Procedures

Fifteen sixth grade math teachers were eligible and recruited to participate in the study. More teachers were not eligible to participate due to the limits of the math assessment utilized and specific curriculum targeted for the study. The researcher provided teachers with an informed consent letter notifying them of the purpose of the study and providing an active opt in (See Appendix E). The

letter indicated any potential risks and reinforced the confidentiality of their participation and survey results as required by the Institutional Review Board (IRB). As noted by McMillan and Schumacher (2006), researchers should be as open and honest with the subjects as possible. They continue by stating that, “Informed consent is achieved by providing subjects with an explanation of the research, an opportunity to terminate their participation, at any time with no penalty, and full disclosure of any risks associated with the study” (p. 143).

Teachers were asked to return correspondence, including the informed consent, if they were willing to participate. Eight teachers (53%) agreed to participate in the study and completed the Bar-On E.Q-i emotional intelligence assessment via an online survey called the EQ-i 125. The EQ-i 125 served as the instrument chosen to measure the teachers' emotional intelligence.

The researcher selected the 125-item survey, located in Appendix F, in part, as it could be completed in a timeframe consistent with a typical teacher’s planning period and it provided a thorough evaluation of a teacher's emotional intelligence. This research into the EQ-i 125 produced easily understood descriptions of emotional intelligence while maintaining strong and well-vetted validity and reliability scores along with thorough factor analyses. Mae Hapal, a researcher in the psychology department at the Polytechnic University of the Philippines, added, "The emotional quotient Inventory (EQ-i) is the first scientifically validated and most widely used emotional intelligence assessment in the world. Based on more than 20 years of research worldwide, the EQ-i examines an individual’s social and emotional strengths and weaknesses" (n.d.,

p. 6). The evolution of the EQ-i reaches back to 1983 and has involved multiple iterations, based on further studies repeated internationally, involving over 4000 participants (Bar-On, 2004). Bar-On (2004) claims that the EQ-i was scientifically developed over a 17-year period to provide objective, cross-cultural information about a person.

The primary investigator acquired the EQ-i 125, from Multi-Health Systems, a publisher located in North Tonawanda, New York for approximately $26.00 per assessment, in addition to the online scoring service and the technical manual to assist with data interpretation. Teachers received a password and given one week to complete the survey. They were additionally informed they would receive results from the survey, which would be kept confidential.

The 125 survey items of the EQ-i were administered "in the form of short sentences using a 5-point Likert scale with a textual response format ranging from 'very seldom or not true of me' to 'very often true of me or true of me" (Bar-On, 1997, p. 3). All questions address Bar-On's construct consisting of 15 subscales grouped in five composite scales. The five composite scales of Bar-On's construct are intrapersonal relationships, interpersonal relationships, stress management, adaptability, and general mood. The five dimensions or composite scales are comprised of fifteen subscales (Bar-On, 2004). Appendix A presents the subscales under each dimension and the characteristics assessed.

This study also required a reporting of student math achievement against which to measure the teachers' emotional intelligence. In Cherokee County,

elementary and middle school students complete an assessment (i.e. Ed Performance test) in the fall and spring of each school year to identify achievement gains in mathematics and reading. During the 2008-2009 school year, gains were determined and assigned to students via the change in scale scores achieved from one testing period to another. Students who did not complete the assessment in either the fall or the spring were removed from the study since no gain score could be reported.

The Scantron Corporation published the Ed Performance test as a computer adaptive diagnostic in which students complete a mathematics and reading assessment to measure gains over time. Teachers and school administrators utilized the Ed Performance test to help identify students with skill or knowledge deficits and to measure improvement in achievement after the application of intervention or deficit reduction activities. The web-based assessments required approximately one hour of class time for completion. Math units or skills assessed included number and operations, algebra, measurement; geometry, data analysis and probability, problem solving and computation skills. Students between the grades of two and nine complete the Ed Performance assessment two or three times per year.

Reliability and Validity of the EQ-i

Reliability and validity of the EQ-i have been established during the past 20 years of development and testing (Bar-On, 2004). The instrument's technical manual indicates nine types of validity studies were conducted. "They include: content, face, factor, construct, convergent, divergent, criterion-group,

discriminant and predictive validity....each scale and sub-scale was tested across all of these dimensions, reinforcing the instrument's strength" (Bar-On, 2004, 89).

The EQ-I technical manual indicates both basic types of reliability studies, internal consistency and retest reliability, were carried out on the EQ-i. Bar-On (2004) reports, "By examining the results of the internal consistency and retest reliability studies, it can be concluded that the EQ-I has demonstrated more than adequate reliability" (p. 88). Bar-On (2004) goes further, stating that those who administer this inventory can, with confidence, rely on the accuracy of the results received. Dawda and Hart (2000) support this assertion after conducting an independent assessment of the EQ-i, stating that their results indicated that the EQ-i domain and component scales had good item homogeneity and internal consistency and that scores were not unduly affected by response styles or biases.

The EQ-i maintained an internal consistency index and a reported indicator of validity for each subject who completed the instrument. For all eight teachers participating, the EQ-I reported their validity indicators were all within the acceptable range suggesting valid responses and results that were not unduly influenced by response style.

The EQ-i individual summary reported an inconsistency index for each participant. According to the technical manual response inconsistency identifies respondents who contradict their answers or respond randomly (Bar-On, 2004). The inconsistency indicators reported for all subjects fell within the "OK" category indicating that answers are consistent. These indicators were important as they

helped to validate the usefulness of data presented and the reliability of the instrument for use to measure the emotional intelligence of the teachers who participated in this study.

Data Collection

To acquire emotional intelligence scores, the researcher contacted eligible sixth grade math teachers in the spring of 2009, via a hard copy letter (located in Appendix E), requesting their participation in the study. Email requests, including the same letter were distributed on two additional occasions to secure participation. Within a two-week period from the end of May, 2009 through the beginning of June 2009, teachers confirmed their willingness to participate in the study and completed the online EQ-i assessment.

Scores on the EQ-i 125 were computer-generated, and raw scores tabulated and converted into standard scores based on a mean of 100 with a standard deviation of 15 scale score points. Average to above average EQ scores on the EQ-i suggests that the respondent is effective in emotional and social functioning and the higher the score, the more positive the prediction for effective functioning (Bar-On, 2005). Low EQ scores suggest an inability to be effective and the possibility of existing emotional, social and/or behavioral problems (Bar-On, 2005). Bar-On (2004) recommends the invalidation of any score achieved on the EQ-i that is greater than two standard deviations above the instrument mean. This equates to a scale score of 130 or greater.

A correction factor was built into the instrument to automatically adjust the scale scores based on scores obtained from two of the instrument's validity

indices. These indices are Positive Impression and Negative Impression. This important feature of the EQ-i reduces the potentially distorting effects of response bias and therefore increases the accuracy of the results for self-reported measures (Bar-On, 2005).

A web-accessible, five-page individual summary report was generated for each respondent. This report provided demographic information, results including the Total EQ, composite scales, content subscales, validity indicators, positive impression scores, an inconsistency index and individual item responses. Each participating teacher received a separate electronic summary report. An anonymous copy of the summary report is located in Appendix G.

To acquire student math performance scores the researcher requested and received Ed Performance math scores for the students taught by the teachers participating in the study. Students completed a computerized assessment in the fall of 2008. The Ed Performance assessment assigned scale scores, measuring their performance. Students completed a similar assessment in the spring of 2009 and were assigned scale scores. In addition, each student was assigned a gain score demonstrating the level of improvement over the course of the year by subtracting the fall scale score from the spring scale score.

During the spring and early summer of 2009, once students had completed their post- Ed Performance assessments, the researcher contacted principals in schools with participating teachers to request the outcomes of students assigned to those teachers. An excel spreadsheet was requested, omitting student names but including information about the teacher to whom they

were assigned for sixth grade math, the student's gender, whether or not they received special education services and their Fall and Spring Scantron math scale scores. The researcher redacted the scores and corresponding data of students who failed to complete either the Fall or Spring assessment.

Data Analysis

To explore possible relationships which may exist between the emotional intelligence of teachers and achievement of sixth grade math students, the researcher used measures of central tendency to evaluate the five emotional intelligence composite scales and 15 subscales as related to their students' math achievement. Specifically, means and standard deviations were reported on the five composite scales of emotional intelligence. The composite scales are: intrapersonal, interpersonal, stress management, adaptability, and general mood.

The means and standard deviations were also reported for the 15 emotional intelligence subscales. The 15 subscale were self-regard, emotional self-awareness, assertiveness, independence, self-actualization, empathy, social responsibility, interpersonal relationship, stress tolerance, impulse control, reality testing, flexibility, problem solving, optimism and happiness. Descriptive statistics were utilized to disaggregate teacher scores. These and the composite scale scores were also evaluated against teacher demographics to better understand how different teachers rated across the emotional intelligence outcomes.

The researcher measured student math achievement utilizing the Ed Performance assessment scores. Scores were reported as pre-test scores, post-test scores and gain scores, indicating the difference between the two. Outcomes

were reported, per teacher, for comparison. Descriptive statistics were calculated and considered, based on teacher demographic data and emotional intelligence outcomes.

Role of the Researcher

The researcher performed this study as the primary and only investigator, producing all necessary documentation, recruiting and confirming participants and evaluating all collected data. The researcher conferred with doctoral committee members and, on at least four occasions, with statistics advisors from two different, local universities.

Because the primary researcher serves as a middle school principal within the targeted school district, it was important to maintain some separation from the teacher participants by not electing to conduct the study with his home school. Teacher participants and students involved were in no way influenced or evaluated by the researcher.

Limitations

As an exploratory investigation with limited resources, several limitations to this study surfaced quickly. The limitations included its small sample size of eight teachers. Having fewer participants within a sample typically leads to a lack of variance. This few participants violated the assumptions for conducting parametric investigations and interpreting or generalizing any findings. Lacking variance and can greatly hinder the ability to find significant differences or relationships among data reported.

The self-reporting nature of the survey instrument may have acted as a limiting factor as well. However, the EQ-i utilizes an inconsistency index, positive and negative impression score, and correction scale to enhance validity. The instrument provides these measures to help the researcher determine whether or not the results are a realistic and accurate self-appraisal that is not overly negative or positive. Day and Carroll (2012) refute this claim stating that participants are able to "fake it" or significantly increase their scores on the EQ-i when motivated to do so. In their study, students were motivated by the use of fifty dollars to produce higher EQ scores. Then students were asked to take the assessment again, the second time without any money to motivate their responses. Significant score differences were achieved. The positive impression index did not adequately identify the elevated scores.

The study could, therefore, be improved if a multi-rater scale had also been utilized and compared with the self-reported scale results. An investigator could accomplish this by either soliciting the survey opinions of supervisors, co-workers, or students with whom the teachers work on a regular basis. Several other published instruments, including the EQ 360 and the EQ interview, may be utilized for this purpose.

Another potential limitation is the possibility of many other factors influencing student achievement gains. Classroom differences, lighting, class length, period of the day, and after-school tutoring involving different teachers could all be potential variables not controlled for in this study.

A limitation exists within the sample of teachers as well. There are so many variables that influence good teaching. It is difficult to isolate all but one. There could potentially be one or several unseen possibilities which lead to student achievement. One example could be the math text or program, which was not controlled for in this study.

Finally, the Ed Performance assessments, used to measure student gains, were administered over two days, once in the fall and again in the spring. They may not be aligned with the teacher's taught curriculum and like every test, scores may be influenced by individual student motivation and personal or environmental distractions.

This study of teacher emotional intelligence and its relationship to student performance is a unique one. The goal of this study was to shed some light on a potential teaching variable or variables, which principals may rely on to hire effective teachers, to lead or interact with those teachers and to affect teacher professional development. This exploratory study just begins to provide useful information and data which could lead to future studies.

This study was negatively affected from the beginning by a low number of participants. The targeted group of teachers was only 15 due to organizational and management issues. The teacher population should have been at least two to three times this number. With only eight teachers agreeing to participate, accumulating generalizable results was very difficult and hence, inferential statistics were not utilized. The cost of the EQ-i instrument, however, was a mitigation factor which also limited the size of the targeted study population.

The study was additionally limited by the need to maintain student assessment to measure student achievement that would be universal across teachers and administered in a like manner and in like testing environments. This was not controlled for. Another potential limitation was the administration of the study by a known and sitting principal. Due to this fact, it is likely that several of the teachers declined to participate due to a perceived lack of confidentiality or concern that outcomes may influence performance ratings at their own school.

Summary

This chapter provided the framework for the methods undertaken in this investigation. The question selected indicated the researcher's belief there may be a connection between the emotional intelligence of sixth grade math teachers and their students' academic performance. This study examined potential links through the participation of eight middle school teachers and 717 of their students as measured by the Ed Performance assessment of math gains and the EQ-I to measure emotional intelligence.

The next chapter will present the data accumulated and discuss possible associations or relationships across teachers and students. The final chapter will offer conclusions based on the data outcomes and some discussion of next steps for future investigations.

Chapter Four - Results

This chapter reports accumulated data and is organized to provide initial findings based on the question of the study. In addition, data are included to provide insight, which may later lead to additional commentary and further considerations. Due to a lack of participating teachers (N=8) in this study, the parametric assumptions for utilizing inferential statistical instruments was not met. This chapter will focus on reporting the descriptive statistics.

The purpose of this study was to investigate the potential relationship between the emotional intelligence of teachers and the achievement of the sixth grade math students in their classrooms. Specifically, the study focused on the following question:

> What relationships exist between the measured emotional intelligence of sixth grade math teachers and the achievement of their students?

This chapter is organized to provide the student math achievement data and teacher emotional intelligence outcomes. These outcomes will be discussed as an aggregate group and then disaggregated by teacher. Student math outcomes will be discussed first and then referenced in discussion of the different emotional intelligence measures, total EQ, composite scales and subscales. The researcher will use descriptive statistics to inform discussion.

Measuring Student Math Achievement

To discuss the research question, the gain scores achieved by students for each teacher participating in the study were calculated and matched with the corresponding teacher's emotional quotient score. Given the need for matched pre- and post-scores to calculate overall gain scores, 47 of students who did not

meet this criteria were omitted from the study. Table 4.1 depicts the pre-test scale score ranges of students.

The Ed Performance fall assessment was completed by students between August 15th and September 30th, 2008. Of the 717 students, scale scores ranged from 1,971 to 3,137, with a group mean of 2,623.35 (SD = 160.18). According to the national norming documentation provided for this assessment, students scoring between 2,429 and 2,676 at the beginning of the school year fell in the interquartile range. Students scoring 2,839 or above were considered advanced and preformed within the top quartile of students nationally. Those performing below 2,428 were considered at risk and in the bottom quartile nationally. Twenty-five students of the 717 (3%) fell in the at-risk range. Forty-eight students (6%) performed in the advanced range. The mean of this sample scored at the high end of the nationally normed inter-quartile range.

Table 4.1 additionally depicts the central tendencies of the student pre-test scores by teacher and summarizes totals. The table provides the number of students taught by each teacher in addition to the minimum and maximum scores achieved by individual students within the corresponding teachers' classes. In addition, the range of student scores, mean and standard deviations are noted.

Students instructed by teacher A showed the greatest range of pre-test scores with outcomes as low as 1,971 and scores as high as 3,021, a range of 1,050 points (SD = 194.5). The average range for the group was 791.75. In contrast, the range of student scores for teacher H was a pre-test score of 2,312

and a high score of 2,972, for a range of 660 points. Most teachers fell within the 700 to 880 point range with standard deviations in the 140 range.

As previously noted, students who scored in the range from 2,429 and 2,676 at the beginning of the school year ranked in the inter-quartile range, which was consistent with the study sample. The total mean scale score of 2,623.35 ranked at the upper end of the inter-quartile range.

Table 4.1

Pre-Test Scale Score Central Tendencies- Student Scores by Teacher

Teachers	No. of Students	Minimum Score	Maximum Score	Range	Mean	Std. Deviation
Teacher A	122	1971	3021	1050	2608.48	194.5
Teacher B	82	2029	2903	874	2525.41	162.8
Teacher H	98	2314	3111	797	2668.84	139.1
Teacher D	77	2330	3137	807	2677.45	146.8
Teacher E	96	2157	2861	704	2594.65	141.2
Teacher F	94	2123	2883	760	2612.27	148.3
Teacher G	73	2302	2984	682	2668.23	127.7
Teacher H	75	2312	2972	660	2646.55	141.7
Total	717	1971	3137	1166	2623.35	160.1

The middle schools in Cherokee County conducted the Ed Performance post-test between April 1st and May 15th. Of 717 students, the lowest performer achieved a scale score of 2,181 while the highest performer achieved a score of 3267 for a range of 1086 points. The mean score for the group was 2,770.07 (SD = 155.90).

For the spring data points, students scoring between 2,528 and 2,798 were considered to be within the inter-quartile range. Students performing below 2,527 were considered at risk and students performing above 2,973 were considered to be advanced, based on their nationally normed data (Scantron Performance Series Technical Report, 2009). Similar to the pre-test data, the group mean of 2,770.07 fell within the inter-quartile range but at the upper end.

Table 4.2 depicts the central tendencies and totals of the student post-test scores by teacher. This includes the number of students taught by teachers in addition to the minimum and maximum scores achieved by individual students within their corresponding teachers' classes. In addition, the range of student scores, means and standard deviations are noted.

Similar to the pre-test, students instructed by teacher A showed the greatest range of post-test scores from 2,181 to 3,127 for a range of 946, compared to pre-test range of 1,050 scale score points (SD = 194.5 pre-test and 183.87 post-test). In contrast, students from teacher E posted a minimum post-test score of 2,429 and a high score of 3,034, with a range of 605 points. For reference, the range for the group was 1,086 with an average range of 750.75, both of which were smaller than the pre-test.

In terms of variance, teachers A (SD = 183.87) and B (SD = 184.37) posted the highest standard deviations of the group. Teacher H's students posted the highest mean scores (2838.41) and the smallest standard deviation (113.34). Teacher E, whose students did not score quite as high (M = 2759.49) maintained a small standard deviation (118.16) as well. This demonstrates that

teacher E's and teacher H's student gain scores were much more homogeneous while teachers A and B scores demonstrated more variance and more heterogeneity across their students' performance.

Table 4.2

Post-Test Scale Score Central Tendencies- Student Scores by Teacher

Teachers	N	Minimum	Maximum	Range	Mean	Std. Deviation
Teacher A	122	2181	3127	946	2748.07	183.87
Teacher B	82	2191	3076	885	2723.79	184.37
Teacher C	98	2459	3071	612	2784.18	149.28
Teacher D	77	2447	3267	820	2830.68	148.88
Teacher E	96	2429	3034	605	2759.99	118.16
Teacher F	94	2311	3024	713	2745.49	140.01
Teacher G	73	2184	2988	804	2750.63	150.45
Teacher H	75	2422	3043	621	2838.41	113.34
Total	717	2181	3267	1086	2770.07	155.90

Table 4.3 depicts the mean beginning and ending scale scores by teacher. Overall, students earned a mean scale score gain of 146.72 points, calculated from the difference between the mean post-test score of 2770.07 and the mean pre-test score of 2623.35. Among the 717 students, the individual gains ranged from 720 points of gain to a student who posted a -282 point loss from pre-test to post-test, for a total range of 1002 points.

Of the eight who participated in the study, students taught by teachers D, E, and H achieved the highest mean gain scores of 153.23, 165.34 and 191.86,

respectively. Students in the classes of teachers G, C, F and B achieved the lowest aggregate mean scale score gains of 82.4, 115.34, 133.22 and 134 respectively. Interestingly, teacher C's mean student post-test scale score (2784.18) ranked at the upper end of the interquartile range and her students' pre-test mean scale score (2668.84) was one of the highest as well but only managed to achieve 115.34 points of mean gain, well below the 146 point mean for all students. Likewise, teacher G, the most inexperienced of the group with less than five years of teaching experience, inherited the second highest achieving group of students at the beginning of the year (M=2668.84). Her students made only 82.4 points of gain, finishing the year with a mean post-test score of 2750.63, twenty points below the mean post-test score. The table shows the numbers of students taught by teachers.

Table 4.3

Student Achievement Mean Scale Score Gains Per Teacher

Teachers	# Students	Pre-Test Mean Scale Score	Post-Test Mean Scale Score	Mean Scale Score Gain
Teacher A	122	2608.48	2748.07	139.59
Teacher B	82	2525.41	2659.41	134.00
Teacher C	98	2668.84	2784.18	115.34
Teacher D	77	2677.45	2830.68	153.23
Teacher E	96	2594.65	2759.99	165.34
Teacher F	94	2612.27	2745.49	133.22
Teacher G	73	2668.23	2750.63	82.40
Teacher H	75	2646.55	2838.41	191.86
Total	717	2623.35	2770.07	146.72

Measuring Teacher Emotional Intelligence

Bar-On (2004) reported that one third of all individuals taking the EQ-i will achieve total EQ scores between 85 and 115. The EQ-i technical report indicated the instrument was scaled to a mean of 100 with a standard deviation of 15 points. Bar-On (2004) indicated that individuals achieving total EQ scores above 100 were considered emotionally intelligent, while those whose scores fell below 90 may need to improve emotional skills in specific areas.

Table 4.4 reports the minimum and maximum composite scale scores, mean scores, ranges and standard deviations in addition to the same measures for the total EQ of the eight teachers participating in the study. This table

indicates that teachers' total EQs ranged from 90 to 116, a range of 26 points. The teachers (N=8) achieved a mean EQ score of 103.88 (SD = 10.68). The total EQ provides the researcher with a starting, but broad measure of a person's emotional intelligence (Bar-On, 2004).

The mean scores for the EQ composite scales fell within a small range of 5.12 points. This range (100.13 - 105.25) brackets the total EQ (M = 103.88) for the group. The teachers achieved the highest scores for Intrapersonal relationships (M = 105.25, SD = 8.00) with adaptability (M = 100.13, SD = 8.63) being scored the lowest. Ironically, these two composite scales demonstrated the least amount of variance, with the smallest standard deviations and the smallest ranges of scores for this group of teachers. The range of scores for intra-personal relationship was only 22 points and 23 points for adaptability.

Conversely, the greatest ranges and variance of scores were recorded for interpersonal relationships (M = 104.13, SD = 15.92) with a range of 44 scale score points and general mood (M = 105.13, SD = 15.32) with a range of 42 points.

Table 4.4

Total EQ and Composite Scale Descriptives

Composite Scale	Range	Minimum	Maximum	Mean	Std. Deviation
Intra-Personal	22	95	117	105.25	8.00
Inter-Personal	44	78	122	104.13	15.92
Stress Mgmt.	32	87	119	104.00	10.91
Adaptability	23	87	110	100.13	8.63
General Mood	42	80	122	105.13	15.32
Total EQ	26	90	116	103.88	10.68

Table 4.5 depicts the adjusted EQ scores for each teacher after completing the EQ-i 125. The table notes the total EQ score and the five individual composite scale scores for each teacher. The EQ-i report presented a validity comment for each participating teacher. The scores of all teachers fell within the acceptable range, suggesting valid responses that were not unduly influenced. In addition, the EQ-i instrument reported an inconsistency and impression index, calculated based on survey responses. The scores presented were adjusted by the EQ-i instrument for each teacher based on the measured positive impression score.

Within this study, five teachers (Teacher A, B, C, E and F) received composite scale scores at least 10 points above or below their total EQ score. Teachers A and B both achieved total EQ scores of 90, which Bar-On would consider to be below the mean and could be improved upon. Teacher A earned

very consistent composite scale scores of either 94 or 95, with the exception of inter-personal relationship (78) which was markedly lower. Teacher B's composite scale scores ranged from 80 to 104, with three scores in the 80s (stress management, adaptability and general mood). These teachers demonstrate Bar-On's concern about considering only the total EQ to describe an individual's emotional intelligence. Although they both maintain total EQ scores of 90, their composite scales draw a much different picture. Three of teacher B's composite scale scores are more than one standard deviation from the mean while that is only true for one of teacher A's composite scales.

Teachers G and H achieved the highest overall total EQ scores of 115 and 116, respectively. Their composite scales were very high with a distribution from 108 to 119, both extremes in the range being achieved by teacher G. Teachers E and F both achieved high scores in general mood (122) while teacher E also earned a 122 composite scale score in interpersonal relationships as well.

In terms of composite scale ranges, teacher H, who earned the highest total EQ score, also had the smallest range of composite scale scores, with all scores falling within eight points (110 - 118) of each other. Interestingly, Teacher H's students also achieved the greatest math gains (M=191.86) as an aggregate group. Teacher F maintained the largest range (93 -122) of composite scale scores, measuring 29 points of difference. Teacher F's students as a group only achieved 133.22 points of mean gain on their math assessments from fall to spring.

Table 4.5

Teachers' Total EQ and Composite Scale Scores

Teacher	Total EQ	Intra-personal	Inter-personal	Stress Manage	Adapt	General Mood
Teacher A	90	95	78	94	94	95
Teacher B	90	96	104	87	87	80
Teacher C	107	102	117	101	105	110
Teacher D	95	103	89	97	95	90
Teacher E	110	106	122	112	94	122
Teacher F	108	108	93	111	107	122
Teacher G	115	115	112	119	109	108
Teacher H	116	117	118	111	110	114
Mean	103.88	105.25	104.13	104	100.13	105.13

E.Q. Composite Scale Relationship to Student Achievement

The following table introduces the overall mean scale score gains for the math students, disaggregated by teacher, to provide perspective against the individual teacher composite scale scores and the total emotional intelligence scores of each teacher. Table 4.6 also reports the corresponding composite scales and means for all outcomes. Note that the student math gains reported for the entire group (M = 146.72) is the mean gain for all students (N=717) rather than the mean calculated from the mean gains as reported by teacher. This is necessary due to the differences in the number of students served by each teacher.

When evaluating these data, it was noticeable that teachers E and H, in addition to having several of the highest composite scale scores, also taught groups of students achieving the two greatest mean math scale scores. In addition, one quickly sees that teacher D, whose students earned a better than average scale score gain (M = 153.23), seemed to have lower composite scale scores, ranging from 89 -103. Teacher C, to the contrary, with a much lower student mean gain score of 115.34, achieved EQ composite scale scores ranging from 101 to 117 points.

Teacher G stands out of the group. Although having one of the highest overall EQ scores (115) and exceeding the mean by a standard deviation or better on all but one of the composite scales (general mood), this teacher's students achieved the least in terms of math achievement (M = 82.40). When referring back to the teacher demographic data reported in table 3.1, one notices that this teacher was the least experienced of the group. Teacher G taught for the fewest number of years and achieved the least in terms of college credentials and teacher rank. This, rather than emotional intelligence, may have exerted a greater influence in student achievement.

Table 4.6

Teacher EQ Composite Scale Scores and Student Achievement

Teacher	Math Gains	Total EQ	Intra-Person	Inter-Person	Stress Mgmt.	Adapt-ability	Gen. Mood
Teacher A	139.59	90	95	78	94	94	95
Teacher B	134.00	90	96	104	87	87	80
Teacher C	115.34	107	102	117	101	105	110
Teacher D	153.23	95	103	89	97	95	90
Teacher E	165.34	110	106	122	112	94	122
Teacher F	133.22	108	108	93	111	107	122
Teacher G	82.40	115	115	112	119	109	108
Teacher H	191.86	116	117	118	111	110	114
Mean	146.72	103.88	105.25	104.13	104	100.13	105.13

Exploring EQ Sub-Scales

The researcher conducted an additional investigation, looking for relationships between student math gains and the emotional intelligence subscales of their corresponding teachers. This is the level of greater specificity below the EQ composite scales. Each composite scale was divided into subscales that are more specific descriptors of emotional intelligence. According to Bar-On (2004), "...it is important to examine more closely the EQ composite scales and, particularly, the EQ subscales. A high total EQ score can hide a low score on one or more of the underlying subscales and vice versa" (p. 43). It seemed reasonable, therefore, for this pilot study to venture into a review of the subscales to see if any additional relationships could be recognized to inform future researchers and investigations.

Each of the five composite scales are divided into two to five subscales. These are the most specific of Bar-On's measures through the EQ-i and each teacher had subscale scores assigned to them through the course of the online questionnaire. The 15 subscales and their assignment to corresponding composite scales, with brief definitions, are listed in Appendix A. In the following tables, each of the composite scales, with their complement of subscales are reported for teachers, along with their assigned students' math gain scores.

Table 4.7 introduces the intrapersonal subscale scores per teacher with the corresponding teachers' student math gains. Means and standard deviations are presented for each of the subscale scores across the group. The five intrapersonal subscales are (1) self-regard, (2) emotional self-awareness, (3) assertiveness, (4) independence and (5) self-actualization. Bar-On (2004) describes a person with strong intrapersonal scores as a person who is in touch with their feelings, feels good about themselves, who is positive in what they are doing and is strong and confident in conveying their ideas and beliefs.

Teachers' scored varied across these subdomains. Teachers scored the highest in self-actualization (M = 111, SD = 9.55) with the least amount of variance among the group. In contrast, teachers scored the lowest in independence (M = 95, SD = 14.98) with the greatest amount of variance with scores ranging from 65 to 112 points.

The three teachers (H, E, & D) who scored the highest in self-actualization also taught students who posted the three highest mean math gains across all groups. Teacher H and teacher E, whose students achieved the two greatest

mean gains of 191.86 and 165.34, respectively, also attained the highest scores in self-actualization at 122 and 119, and were the only two teachers near or above a standard deviation (9.55) from the mean of 111 points. Teacher D, additionally achieved a high score of 117 in the self-actualization subscale. Teacher D's students posted the third highest mean math gain of 153.23 points.

Interestingly, teacher G, whose students achieved the least amount of math gain, was the only teacher in the group to earn an assertiveness score (120) which exceeded one standard deviation (10.77) above the mean (105). This elevated score may inform future investigations into the assertiveness subdomain of teachers and possible relationship to student achievement.

Table 4.7

EQ Intrapersonal Subscales and Student Achievement

	Math Gains	SR	ES	AS	IN	SA
Teacher A	139.59	99	91	84	105	102
Teacher B	134.00	80	102	113	102	93
Teacher C	115.34	95	122	101	82	111
Teacher D	153.23	89	107	110	95	117
Teacher E	165.34	110	123	101	65	119
Teacher F	133.22	119	90	104	102	114
Teacher G	82.40	111	118	120	99	113
Teacher H	191.86	113	110	110	112	122
Mean	146.72	102	108	105	95	111
SD	101.96	13.45	12.96	10.77	14.98	9.55

Note. SR = self-regard; ES = emotional self-awareness; AS = assertiveness; IN = independence; SA = self-actualization

Table 4.8 introduces the interpersonal subscale scores of teachers and their students' math performance. The interpersonal composite scale is composed of the empathy, social responsibility and interpersonal relationship subscales. The means for all three subscales were very close with similar variance as measured by standard deviations.

Teachers demonstrated the largest range of scores in interpersonal relationships (M = 104), extending 55 points from 72-127. This was supported by the largest variance (SD = 17.24) of scores. Empathy (M = 102, SD = 14.46) had a range from 77 to 116 points. The range for social responsibility (M = 104, SD = 114.24) extended from 85 to 116 points. In exploration of this composite scale, it was difficult to identify any potential or informative trends. Teachers H and E, whose students achieved the highest math gains, once again posted two of the three highest scores (118 & 115) in the social responsibility subscale. Teacher G, who achieved a social responsibility score of 116 but whose students made the least amount of gain (M = 82.40), contradicted this outcome.

Table 4.8

EQ Interpersonal Subscales and Student Achievement

	Math Gains	Empathy	Social Responsibility	Interpersonal Relationship
Teacher A	139.59	87	89	72
Teacher B	134.00	109	110	100
Teacher C	115.34	116	113	117
Teacher D	153.23	91	88	90
Teacher E	165.34	109	115	127
Teacher F	133.22	77	85	105
Teacher G	82.40	112	116	109
Teacher H	191.86	112	118	115
Mean	146.72	102	104	104
SD	101.96	14.46	14.24	17.24

Table 4.9 depicts the stress management subscales scores for teacher and their corresponding student math achievement scores. The stress management composite is composed of the stress tolerance and impulse control subscales. As a group, the mean scores were similar for both, with stress tolerance (M = 104, SD 14.93) having almost twice as much variance. Impulse control (M = 103, SD = 8.64) had a smaller range and greater homogeneity of scores, all falling between 94 and 105, with the exception of teacher G, who, at a score of 123, was a significant outlier, more than two standard deviations above the mean.

Some interesting numbers were exposed when exploring the stress tolerance subscale. Teachers H and E, whose students achieved the highest

math gains, also earned the highest scores in the subscale. Their scores of 118 and 120, respectively, were the only two to fall at or above one standard deviation from the mean (M = 104, SD = 14.93). Teacher D's outcomes, however, contradicted this statement with the third highest student achievement scores (M = 153.23) but the next to lowest stress tolerance score (90) of the group, nearly a full standard deviation from the group mean.

Table 4.9

EQ Stress Management Subscales and Student Achievement

	Math Gains	Stress Tolerance	Impulse Control
Teacher A	139.59	95	94
Teacher B	134.00	79	99
Teacher C	115.34	103	99
Teacher D	153.23	90	105
Teacher E	165.34	120	101
Teacher F	133.22	117	102
Teacher G	82.40	110	123
Teacher H	191.86	118	102
Mean	146.72	104	103
SD	101.96	14.93	8.64

Table 4.10 introduces the adaptability composite scale and the teacher scores for its subscales of reality testing, flexibility and problem solving, along with the students' corresponding math gains. Problem solving (M = 99) and reality testing (M = 99) had very similar variance and homogeneity of scores with standard deviations of 7.54 and 7.78, respectively. Teachers achieved a smaller

mean score in flexibility (M = 94, SD = 13.03) with almost double the variance across scores.

When exploring the subscale outcomes against student math gains per teacher, it was difficult to identify and trends. Teacher H (111) whose students were the highest math performers (M = 191.86) and teacher C (109), whose students performed near the bottom (M = 115.4), earned the highest scores achieved by teachers in problem solving, effectively contradicting each other. Teacher E, whose students achieved the second highest math gains, scored a 91 on this subscale, which was more than one standard deviation below the mean, additionally confusing the outcomes.

Teachers H and E, with their students' high math performance, achieved two of the three highest score in reality testing, at 113 and 112, respectively. Teacher G, contradicted this potential with the highest reality testing score of 113, more than one standard deviation from the mean (106) but with the lowest overall student math gains (M = 82.40).

The teachers' performance scores on the flexibility subscale did not provide any immediately useful insight against math performance with a range of 32 points (79-111), seemingly scattered indiscriminately across all student achievement scores. However, it is interesting to note that the teacher mean score for flexibility (94) was the lowest for all of the 15 subscales with independence (95) being a close second.

Table 4.10

EQ Adaptability Subscales and Student Achievement

	Math Gains	Reality Testing	Flexibility	Problem Solving
Teacher A	139.59	98	87	100
Teacher B	134.00	93	83	90
Teacher C	115.34	101	102	109
Teacher D	153.23	107	80	99
Teacher E	165.34	112	79	91
Teacher F	133.22	110	111	96
Teacher G	82.40	114	108	99
Teacher H	191.86	113	101	111
Mean	146.72	106	94	99
SD	101.96	7.78	13.03	7.54

Table 4.11 depicts the general mood composite scale and teacher performance on its two subscales of optimism (M = 107, SD = 11.22) and happiness (M = 104, SD = 16.98). As a group, teachers achieved nearly the same mean scores across these subscales. Teacher scores in happiness are spread across a larger range (74 - 120) than in optimism (92 - 122), reinforcing its larger standard deviation.

The teacher scores for happiness did not appear to coincide in any manner with their corresponding student achievement scores.

Teacher scores for optimism showed more promise. Teacher H and E, whose students maintained the highest mean math gains of 191.86 and 165.34, respectively, also posted two (118 & 117) of the three highest scores in optimism.

Teacher F achieved a score of 122 on the optimism subscale but taught students who failed to meet or exceed the math achievement mean score. All three of their optimism scores approached or exceeded one standard deviation above the mean for the group. Teacher C, whose students achieved the next to lowest math gains, eared an optimism score of 109, which was two points above the mean for the group and a happiness score of 112 which was eight points above the group mean. This teacher's performance across the general mood subscales, tended to contradict other scores and violated potential relationships.

Table 4.11

EQ General Mood Subscales and Student Achievement

	Math Gains	Optimism	Happiness
Teacher A	139.59	96	97
Teacher B	134.00	92	74
Teacher C	115.34	109	112
Teacher D	153.23	98	85
Teacher E	165.34	117	122
Teacher F	133.22	122	120
Teacher G	82.40	105	111
Teacher H	191.86	118	108
Mean	146.72	107	104
SD	101.96	11.22	16.98

Summary

This exploratory investigation attempted to uncover some data useful for initiating other studies into the possible relationships that may exist between the

emotional intelligence of teacher and their students' corresponding achievement. This chapter disaggregated the emotional intelligence scores of eight participating teachers, down to the 15 individual EQ subscales. Although no inferential statistics were utilized for this study, due to the limited number of participants, some interesting data were produced which may further inform future researchers interested in the pursuit of similar or related studies.

This study identified a few areas of interest based on teacher emotional intelligence measures and the math performance of their students. When exploring the total EQ, teachers H and E achieved two of the three highest scores and the greatest math achievement gains. Teacher G, however had the second highest total EQ and the lowest student achievement scores, which seemed to defeat a possible relationship.

When exploring the EQ composite scales, either teachers E and H, whose students made the greatest gains, posted the highest scores across all the composite scales, except stress management. Contrary to this information was teacher G, who earned the second highest composite scale scores in three areas and the highest in stress management, even though her students were the lowest performers.

An exploration of the 15 EQ subscales provided some insight. Teachers H and E scored the highest on the stress tolerance subscale while teaching the two groups of students who made the greatest gains. Teachers H, E and D additionally posted the highest subscale scores in self-actualization which related to the fact that their students achieved the three highest gains in math. Although

these numbers are not statistically significant due to a lack of sample size and incorporation of parametric measures, they may promote additional work into a larger study incorporating more teachers to measure the size and strength of possible relationships, effects, significance and generalizability.

Chapter five will summarize the research and findings of this pilot study. It will discuss the limits of these data and make recommendations for future research. Chapter five will also attempt to generalize the findings back into the research and provide additional thoughts about the study of the emotional intelligence of teacher and the possible uses in the field of education.

Chapter Five- Discussion

Introduction

Chapter five contains four important sections. The first section summarizes the study to provide an overview of the problem, the purpose, the research question along with a summary of findings. The discussion section provides literature framing the study, a narrative regarding the findings and a synthesis of the results and recommendations for future research or examination. The final section will conclude the chapter and provide additional thoughts.

Linda Darling-Hammond (1997) states that the classroom teacher is the most influential variable promoting student achievement outside of the child's home environment. Several questions remain. What do successful teachers do that influence and promote student achievement? What variable or variables "make" a good teacher? Do relationships and emotional understanding really make a difference? Can these differences be quantified or measured? Can the successful variables be grown through professional development or mentoring?

The question driving this study is; do relationships exist between a teacher's emotional intelligence and the academic achievement of his or her students? Surmising, based on previous research, that students best perform when they have an established relationship with, or trust in a teacher, it was hypothesized that increased student performance may relate to teachers maintaining higher levels of emotional intelligence. Teachers with higher emotional intelligence would, therefore, be better suited to interact with students and peers leading to greater achievement. This, in turn, would better inform

hiring officials and principals, and influence professional development as a means to increase student achievement via the enhancement of a teacher's emotional intelligence.

Summary of the Study

The purpose of this study was exploratory in nature, to investigate the relationship between the emotional intelligence composite scales and sub-domain scores of teachers and the achievement of their sixth grade math students.

Although only an exploratory investigation into the potential connection between a teacher's emotional intelligence and the possible association with student outcomes, clarity is elusive. Part of this results from the lack of teacher participants (N=8) and the many possible, unmeasured or isolated variables, which may be at play within or across classrooms and schools. This is always an issue and consideration when conducting research in the social sciences. Some interesting data did emerge, particularly in the composite scale of inter-personal relationships and the subscales of stress tolerance and self-actualization. These data were slightly skewed by some contradictory findings but could still help to inform future investigations.

Discussion

This study into the emotional intelligence of teachers and its relationship to student achievement is a new one, unique within the literature. No previously published studies have attempted to understand this concept. The hypothesis and proposed framework, connecting teacher emotional intelligence to student

achievement (Appendix B), is based on former studies, primarily in the business sector and teacher-student relationship/ motivation domains.

School district personnel and building principals work tirelessly to find, retain and professionally develop teachers who achieve results to meet the demands of high stakes accountability. Othman, et. al. (2008) contend that “employees with the abilities to perceive, understand, and regulate emotion in self and others and the ability to use emotion to facilitate thought and actions would be able to achieve high performance in their job” (p. 34). Of importance to education is the understanding of the teacher as a worker, one hopefully capable of high performance as measured by the achievement of his or her students.

Challenging classrooms, particularly ones with students of low socio-economic or minority backgrounds, present additional instructional concerns, requiring teachers to utilize a specific skillset to motivate and manage learners. McNulty and Quaglia (2007) note that relationships between teachers and students matter, particularly in those schools servicing high risk populations. Helm (2007) mentions a study by Harme and Pianta who found that students with significant behavior problems are less likely to have problems if their teachers are sensitive to their needs and provide frequent, consistent, and positive feedback. Ang (2005) supports this, adding that positive teacher-student relationships that are free of conflict will be predictive of student achievement. These researchers make a general case that relationships and a teacher's affect can influence the performance of students within their classrooms.

In an effort to link relationships and student achievement to emotional intelligence, one must understand the EI construct. Bar-On (2007) states that emotionally intelligent people are better able to manage personal, social and environmental change by coping with the immediate situation and solving problems of an interpersonal nature. This is supported by a teacher self-efficacy study by Fabio and Palazzeschi (2008) who found that a link existed between teachers with higher emotional intelligence and teacher self-efficacy in the ability to manage their classroom, and motivate students.

Study Question. The goal of this pilot study was to explore the following question: What relationship exists between the measured emotional intelligence of sixth grade math teachers and the achievement of their students? The focus was to explore emotional intelligence through the five composite scales and 15 subscales demonstrated by individual sixth grade math teachers and identify relationships or associations between their EQ and their students' achievement.

The mean scale score gains for each teachers' students were used to measure student performance. Likewise, the web-based results of the Bar-On Emotional Quotient Inventory provided the emotional intelligence scale scores. The total EQ, five composite scale scores and 15 subdomain scores were measured for each teacher. This study utilized all eight participating teachers' scores for comparison and the math gain scores of their corresponding students.

The exploration into possible relationships yielded only a few meager considerations worthy of mention. When exploring the total EQ, teachers H and E achieved two of the three highest score and the greatest math achievement

gains. These two teachers were both veteran female teachers, near or exceeding twenty years of experience. Bar-On states that emotional intelligence continues to increase well into an individual's forth decade of life. Both of these teachers had achieved a master's degree, were certified for both elementary and middle school math and were over 50 years of age. Any of these other factors may play as large a part or more in their students' high math achievement.

Teacher G, however, achieved the second highest total EQ and the lowest student achievement scores. On its face, this seems confusing. Upon further exploration, teacher G was the least experienced of the eight, with less than four years of teaching under her belt. She had not yet earned her master's degree and rank two status. Additionally, she did only acquired middle school (5-9) math certification, unlike teachers E and H who also maintained and extra elementary certification. How that matters is undetermined by this pilot study. Nevertheless, there are definitely other variables interacting with these data.

A further exploration into the 15 EQ subscales provided additional information worth pursuing. Teachers H, E and D achieved the highest subscale scores in self-actualization. This is important to note as their students, likewise, achieved the three highest mean gains in math. Teachers H and E scored the highest on the stress tolerance subscale while teaching the two groups of students who made the highest gains. This review will continue with a discussion of the possible relationship connections between teaching and the self-actualization and stress tolerance subdomains for consideration by researchers for future investigations.

Self-actualization. Intrapersonal relationship is a composite scale, which also contains the self-actualization subscale. Bar-On (2004) describes a person with a strong intrapersonal score as a person who is in touch with their feelings, feels good about themselves, who is positive in what they are doing and is strong and confident in conveying their ideas and beliefs. Like in business, particularly in sales and marketing, self-confidence and a positive affect may promote success in classrooms. How many students have languished in a negative, boring classroom or been instructed by teachers who lacked the emotion or passion to engage student in healthy conversation or investigation of course content?

Andrew Martin of the University of Western Sydney, Australia, conducted a study in which he utilized his Student Motivation and Engagement Scale to measure 10 facets of motivation and engagement amongst a sample of 1019 teachers. Martin (2006) hypothesized confident teachers are more likely to engage in pedagogy that is positive, proactive and solution-focused. He found that a strong correlation existed between the adaptive behavioral dimension of student planning and teachers' confidence in teaching (p.73). Martin (2006) also found an additional correlation between student mastery orientation and teachers' enjoyment of teaching.

How many students have deviated from the instruction or classroom management of a substitute or novice teacher due to a lack of confidence or self-recognition of goal and process? Self-actualization, which falls within this composite scale, is described by Bar-On (2004) as a subscale whose high scores are obtained by individuals who are able to realize their potential and who

become involved in pursuits that lead to meaningful, rich, and full lives. These people have a good idea of where they are going and why (p.45).

Stress tolerance. Bar-On (2004) describes people scoring high in stress management as those who are able to withstand stress without falling apart or losing control. They are generally calm, rarely impulsive and work well under pressure. He says they can often handle tasks that are stressful or anxiety provoking.

One only needs to Google the term "stressful occupation" or spend ten minutes in school's teacher's lounge or at a teacher team meeting to recognize the fact that teaching is difficult and emotionally draining. Principals and parents want teachers who are able to handle the constant day-to-day pressures of their responsibilities while maintaining a positive affect and purposefully addressing student needs to promote achievement. Carmeli and Josman (2006) found that the regulation of emotions in the workplace was significantly and positively related to the outcomes of task performance, altruism, and compliance. This reinforces that teachers demonstrating elevated EQ subscale scores in stress management may be the best suited to manage the rigors of today's classrooms and exhibit elevated task performance.

Teachers must frequently deal with stressors related to student misbehavior, parent attacks and pressure from supervisors to increase student performance. Salovey and Mayer (2007) claim, "To get these students to their next academic levels, we must meet them where they are....[and] without these

social/emotional skills, the stressors will take over and prevent our students from living up to their academic potential" (pp. 57-58).

A study conducted by Rozelle, Pettijohn and Parker (2006) found that salespersons in the highest performance group maintain significantly higher emotional intelligence scores than those in the lowest performance group (p. 116). Othman, et.al., (2008), contend that "employees with the abilities to perceive, understand and regulate emotion in self and others and the ability to use emotion to facilitate thought and action would be able to achieve high performance in their job" (p. 34). These statements strongly support the possibility of association between teaching outcomes and the need to manage stress tolerance, as possible measured by the EQ-i or another emotional intelligence instrument.

Upon further analysis of the results, two conclusions could be interpreted. One may consider this an adequate exploratory investigation, finding small incidents of data that may lead to further investigations of potential relationships existing between the emotional intelligence of teachers and student achievement. However, one may alternatively consider that the small population of teachers participating and often contradictory information difficult to inform any future directions for study. Due to the lack of statistical significance from this study, generalization to the scientific field and a further discussion of relevant literature is unnecessary.

Recommendations

This pilot study does provide some worthwhile data, worthy of further investigation. These data, through the measure of central tendency, indicate that there is a possibility of relationship between teacher emotional intelligence scores and student achievement, at least in terms of self-actualization and stress management. If, in fact, these measures of the emotional intelligence of teachers could be later correlated with student achievement and can be generalized to larger populations of teachers and students, across other grades and curricular disciplines, teacher growth and instructional practices would likely be influenced. Regardless of a teacher's emotional intelligence subscales scores, Goleman (1995) contends that emotional intelligence can be learned and improved upon. His contention therefore implies that teachers, regardless of their level of emotional intelligence, can learn to be more emotionally intelligent which may, upon further study, provide insight into student learning.

More study is certainly needed to determine whether or not the emotional intelligence of teachers correlates to student achievement and is worthy of generalization. More research is recommended to ascertain how the emotional intelligence subscales would compare across teachers of differing levels of experience, personal demographics and training. Future researchers should recruit a larger sample of participants. A larger sample should generate enough variance and statistical power to increase the likelihood of producing data capable of statistical significance. Eight participants from an initial pool of 15 is not large enough to achieve this goal.

In addition to a quantitative research design, a future investigator may consider a mixed method approach or qualitative approach to better understand and describe a teacher's emotional intelligence, as defined in the literature, and apply those understandings to measured student outcomes. An additional instrument such as the EQ-360 or EQ Interview could provide a researcher with emotional intelligence information beyond a self-rater format. A qualitative component may assist in data analysis, helping to provide a descriptive narrative to the scores produced by the EQ-i or similar instrument.

Conclusion

The study of teacher emotional intelligence is very new and this study exploring its relationship to student achievement has no predecessor. New performance criteria in schools currently hold teachers to higher standards than ever before. Many states, in competition for federal Race to the Top funding dollars, are building school accountability models incorporating student achievement/ growth and are tied back to an individual teacher. Teacher evaluation processes are changing nationwide. Educators have come to a place in time when research must answer questions about the specific attributes of successful teachers and how those attributes correlate with student outcomes. The question posed through this study facilitated an inquiry into emotional intelligence as a possible indicator, which may be later leveraged by schools and school districts to affect student achievement.

Additional study is recommended. Emotional intelligence, as a construct, has the promise to provide meaningful answers about the successful working

relationships between teachers and students in a classroom. Interpersonal relationship management, self-actualization and stress management capacities may someday prove to be significant measures and indicators of teacher potential, as could many others. However, additional research is required and recommended.

Appendix A

Bar-On's Emotional Intelligence Scales and Subscales

E.Q. Scales and Subscales	Characteristic
Intrapersonal	**Self-awareness and self-expression:**
Self-Regard	To accurately perceive, understand and accept oneself.
Emotional Self-Awareness	To be aware of and understand one's emotions.
Assertiveness	To effectively and constructively express one's feelings
Independence	To be self-reliant and free of emotional dependency on others.
Self-Actualization	To strive to achieve personal goals and actualize one's potential.
Interpersonal	**Social awareness and interpersonal relationship:**
Empathy	To be aware of and understand how others feel.
Social Responsibility	To identify with one's social group and cooperate with others.
Interpersonal Relationship	To establish mutually satisfying relationships and relate well with others.
Stress Management	**Emotional management and regulation:**
Stress Tolerance	To effectively and constructively manage emotions.
Impulse Control	To effectively and constructively control emotions.
Adaptability	**Change management:**
Reality-Testing	To objectively validate one's feelings and thinking with external reality.
Flexibility	To adapt and adjust one's feelings and thinking to new situations.
Problem-Solving	To effectively solve problems of a personal and interpersonal nature.
General Mood	**Self-motivation:**
Optimism	To be positive and look at the brighter side of life.
Happiness	To feel content with oneself, others and life in general.

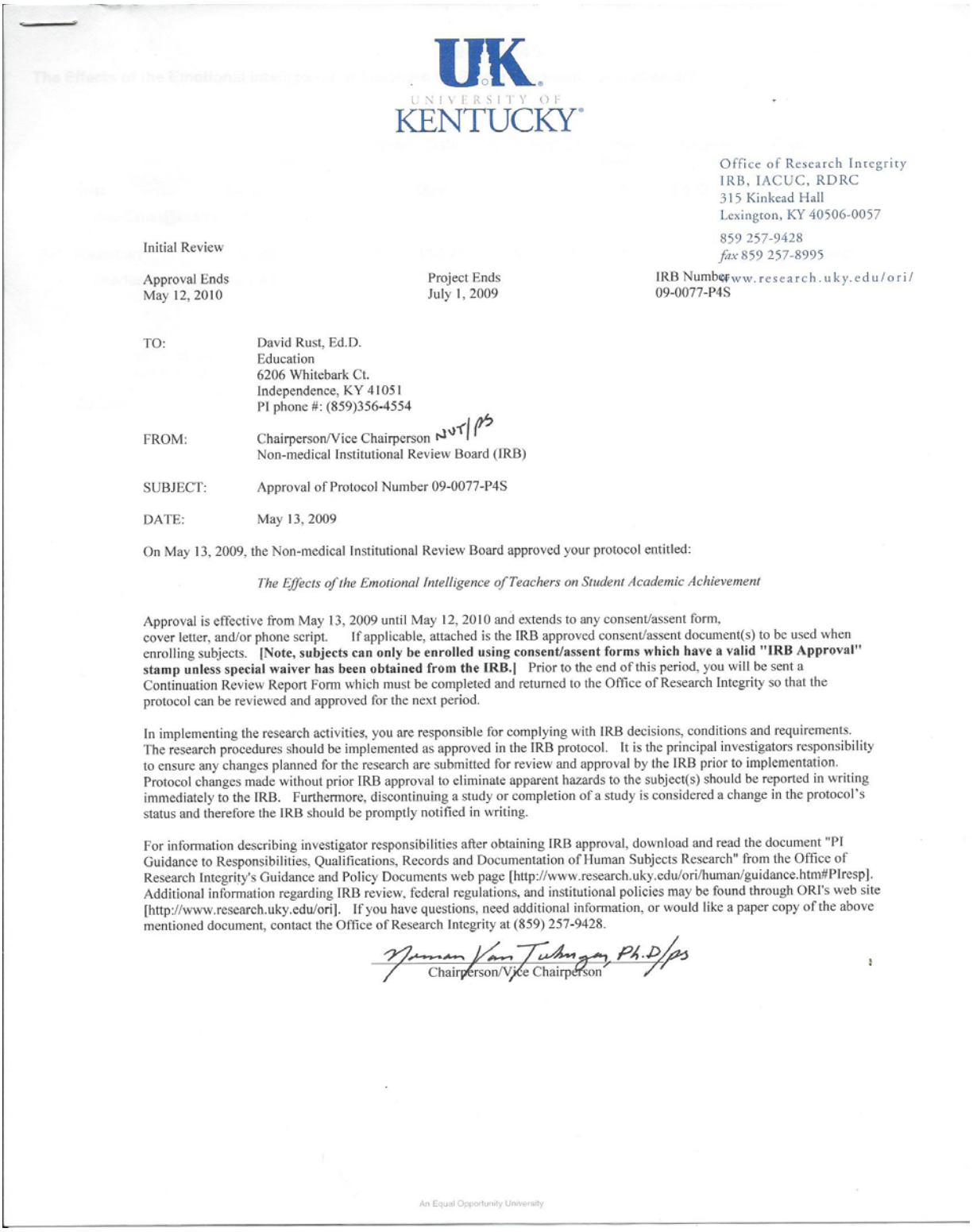
Appendix B

Hypothesized Teacher EI and Student Achievement Logic Chart

E.I. Domains	Potential Teacher Effects	Potential Student Outcomes
Intrapersonal Relationships	Teachers can better recognize and regulate their own emotional responses.	This teacher will be less likely to personalize the student baggage or misbehavior occurring in the classroom. The confident teacher may be more independent and self-motivated to work in student best interests.
Interpersonal Relationships	Teachers can better relate with parents, colleagues and students to meet student needs.	The teacher is aware of others' feelings and can better motivate student as a result. Student achievement will increase because of teachers working effective and collaboratively.
Stress Management	Teachers exhibiting low stress can better deal with reform initiatives, high stakes accountability and student misbehavior.	Teachers demonstrating greater stress management skills may be more approachable for students and more reflective of their work, both leading to achievement.
Adaptability	Teachers can modify instruction to better deal with students who have different learning needs. Teachers are more likely to thrive in the complex classroom environment.	The students in these classrooms will benefit from instruction specifically related to the environment, the complex curriculum and individual emotional needs.
General Mood	Teachers are generally happier and better able to recognize the importance of their jobs and impact on students. Teachers are more optimistic about student capacity for learning and success.	Students of these teachers may be more confident and likely to take chances. These students may be more motivated and expect to perform better due to increased teacher support and confidence in student ability.

Appendix C

IRB documents supporting investigation.



UK
UNIVERSITY OF
KENTUCKY

Office of Research Integrity
IRB, IACUC, RDRC
315 Kinkead Hall
Lexington, KY 40506-0057
859 257-9428
fax 859 257-8995
www.research.uky.edu/ori/

Initial Review

Approval Ends	Project Ends	IRB Number
May 12, 2010	July 1, 2009	09-0077-P4S

TO: David Rust, Ed.D.
Education
6206 Whitebark Ct.
Independence, KY 41051
PI phone #: (859)356-4554

FROM: Chairperson/Vice Chairperson NVT/ps
Non-medical Institutional Review Board (IRB)

SUBJECT: Approval of Protocol Number 09-0077-P4S

DATE: May 13, 2009

On May 13, 2009, the Non-medical Institutional Review Board approved your protocol entitled:

The Effects of the Emotional Intelligence of Teachers on Student Academic Achievement

Approval is effective from May 13, 2009 until May 12, 2010 and extends to any consent/assent form, cover letter, and/or phone script. If applicable, attached is the IRB approved consent/assent document(s) to be used when enrolling subjects. **[Note, subjects can only be enrolled using consent/assent forms which have a valid "IRB Approval" stamp unless special waiver has been obtained from the IRB.]** Prior to the end of this period, you will be sent a Continuation Review Report Form which must be completed and returned to the Office of Research Integrity so that the protocol can be reviewed and approved for the next period.

In implementing the research activities, you are responsible for complying with IRB decisions, conditions and requirements. The research procedures should be implemented as approved in the IRB protocol. It is the principal investigators responsibility to ensure any changes planned for the research are submitted for review and approval by the IRB prior to implementation. Protocol changes made without prior IRB approval to eliminate apparent hazards to the subject(s) should be reported in writing immediately to the IRB. Furthermore, discontinuing a study or completion of a study is considered a change in the protocol's status and therefore the IRB should be promptly notified in writing.

For information describing investigator responsibilities after obtaining IRB approval, download and read the document "PI Guidance to Responsibilities, Qualifications, Records and Documentation of Human Subjects Research" from the Office of Research Integrity's Guidance and Policy Documents web page [http://www.research.uky.edu/ori/human/guidance.htm#PIresp]. Additional information regarding IRB review, federal regulations, and institutional policies may be found through ORI's web site [http://www.research.uky.edu/ori]. If you have questions, need additional information, or would like a paper copy of the above mentioned document, contact the Office of Research Integrity at (859) 257-9428.

Norman Van Tubergen, Ph.D./ps
Chairperson/Vice Chairperson

Consent to Participate in a Research Study

The Effects of the Emotional Intelligence of Teachers on Student Academic Achievement

WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?

You are being invited to take part in a research study about the effects of the Emotional Intelligence of teachers on student academic achievement. You are being invited to take part in this research study because you are a middle school mathematics teacher. If you volunteer to take part in this study, you will be one of about thirteen people to do so.

WHO IS DOING THE STUDY?

The person in charge of this study is David A. Rust, a student at the University of Kentucky in the Department of Educational Leadership. He is being guided in this research by Dr. Charles Hausman. There may be other people on the research team assisting at different times during the study.

WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this study is to compare the student achievement results of students taught by teachers -with high Emotional Intelligence to the student achievement results of students taught by teachers with low Emotional Intelligence. By doing this study, we hope to learn if there is a significant impact on student achievement results in classrooms taught by teachers with high or low Emotional Intelligence. The aggregate Scantron mean gain scores demonstrating student achievement from each participating teacher's classes will be acquired from the district assessment coordinator

ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?

All data will be confidential and will be shared only with the researcher. The researcher will not share data with colleagues or your supervisors in a manner which can personally identify you. Therefore, there are no foreseeable reasons why you should not take part in this study.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?

The research procedures will be conducted with an on-line survey that should take no longer than thirty minutes to complete. You will be given a secure password and access to the on-line survey. You will be asked to complete the survey within one week of receiving the password via e-mail.

WHAT WILL YOU BE ASKED TO DO?

You will be asked to complete an online survey with 133 questions. These questions use a Likert-Scale and ask you to respond to statements according to how like or non-like the questions are to you. The survey has no right

or wrong answers and does have a reliability measure that helps to ensure accuracy of reporting. The entire survey is completed on-line and you will receive a summary of your results immediately upon completion of the survey. You may opt out of the survey or choose to skip individual questions within the survey that you do not wish to answer.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life. Emotional Intelligence scores will not be released by the researcher in a way which would identify you. It would be very difficult for someone to compare student Scantron scores, which will be listed as a groups and make connections to the teacher with whom they are connected.

Although rare, you may find some questions we ask you to be upsetting or stressful. If so, we can tell you about some people who may be able to help you with these feelings. Further, should you desire to strengthen any area of your emotional intelligence as a result of this survey, resources will be given to you in order to enhance these areas.

In addition to the risks listed above, you may experience a previously unknown risk or side effect.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?

There is no guarantee that you will get any benefit from taking part in this study. However, some people have experienced a better understanding of his/her emotional intelligence when analyzing the results of the survey. Your willingness to take part, however, may, in the future, help society as a whole better understand this research topic and the effect of teacher emotional intelligence on student achievement.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering. If you decide not to take part in this study, your decision will have no effect on your current job requirements.

IF YOU DON'T WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?

If you do not want to be in the study, there are no other choices except not to take part in the study.

WHAT WILL IT COST YOU TO PARTICIPATE?

There are no costs associated with taking part in the study.

WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?

You will receive a personalized summary report of your emotional intelligence survey results for taking part in this study. Normally, this report would cost you forty dollars if you were taking it for individual use. Further benefits include the opportunity to benefit from resources designed to enhance specific emotional intelligence domains. Resources, professional development, and leadership opportunities will also be available for you to enhance your emotional intelligence.

WHO WILL SEE THE INFORMATION THAT YOU GIVE?

Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will not be personally identified in these written materials. We may publish the results of this study; however, we will keep your name and other identifying information private. WARNING: It may be possible to identify you based upon the descriptions in the results.

IRB

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. The results of your survey will not be shared with anyone besides the research team. Results and student achievement information will be kept secure at all times either with secure password protections or locked file cabinets for storage of hard copies.

We will keep private all research records that identify you to the extent allowed by law. However, there are some circumstances in which we may have to show your information to other people. For example, the law may require us to show your information to a court or to tell authorities if you report information about a child being abused or if you pose a danger to yourself or someone else. Also, we may be required to show information which identifies you to people who need to be sure we have done the research correctly; these would be people from such organizations as the University of Kentucky.

CAN YOUR TAKING PART IN THE STUDY END EARLY?

If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. You will not be treated differently if you decide to stop taking part in the study.

The individuals conducting the study may need to withdraw you from the study. This may occur if you are not able to follow the directions they give you or if they find that your being in the study is more risk than benefit to you.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator, David A. Rust at (859) 282-4610. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428. We will give you a signed copy of this consent form to take with you.

_____ _____

Signature of person agreeing to take part in the study Date

_____

Printed name of person agreeing to take part in the study

_____ _____

Name of [authorized] person obtaining informed consent Date

Appendix D

School district letter permitting study to be conducted.

[redacted]

[redacted]NTY SCHOOLS

January 21, 2009

Dr. Lars Bjork
Dr. Charles Hausman
Department of Educational Leadership
University of Kentucky
111 Dickey Hall
Lexington, KY 40506-0017

Dear Sirs:

David A. Rust, Principal at R.A. Jones Middle School and doctoral candidate at the University of Kentucky, has the permission of the [redacted] School District to conduct research by surveying teachers and utilizing student performance data for his dissertation. He will obtain the permission of the teachers who will have the opportunity to decline participation. Both student and teacher names will remain confidential.

Sincerely,

[redacted]
Superintendent of Schools

RP/kt

[redacted] County Board of Education

Appendix E

Letter to sixth grade math teacher requesting their participation in the study.

January 25, 2009

Dear Teacher,

As a sixth grade mathematics teacher in the Cherokee County School District, your assistance is requested for the completion of a survey to measure your emotional intelligence for use in a research project I am conducting for my doctoral dissertation. The purpose of this study is to compare the student achievement results of students instructed by teachers with high Emotional Intelligence to the student achievement results of students instructed by teachers with low Emotional Intelligence. By doing this study, we hope to learn if there is a significant impact on student achievement results in classrooms by teachers with high or low emotional intelligence.

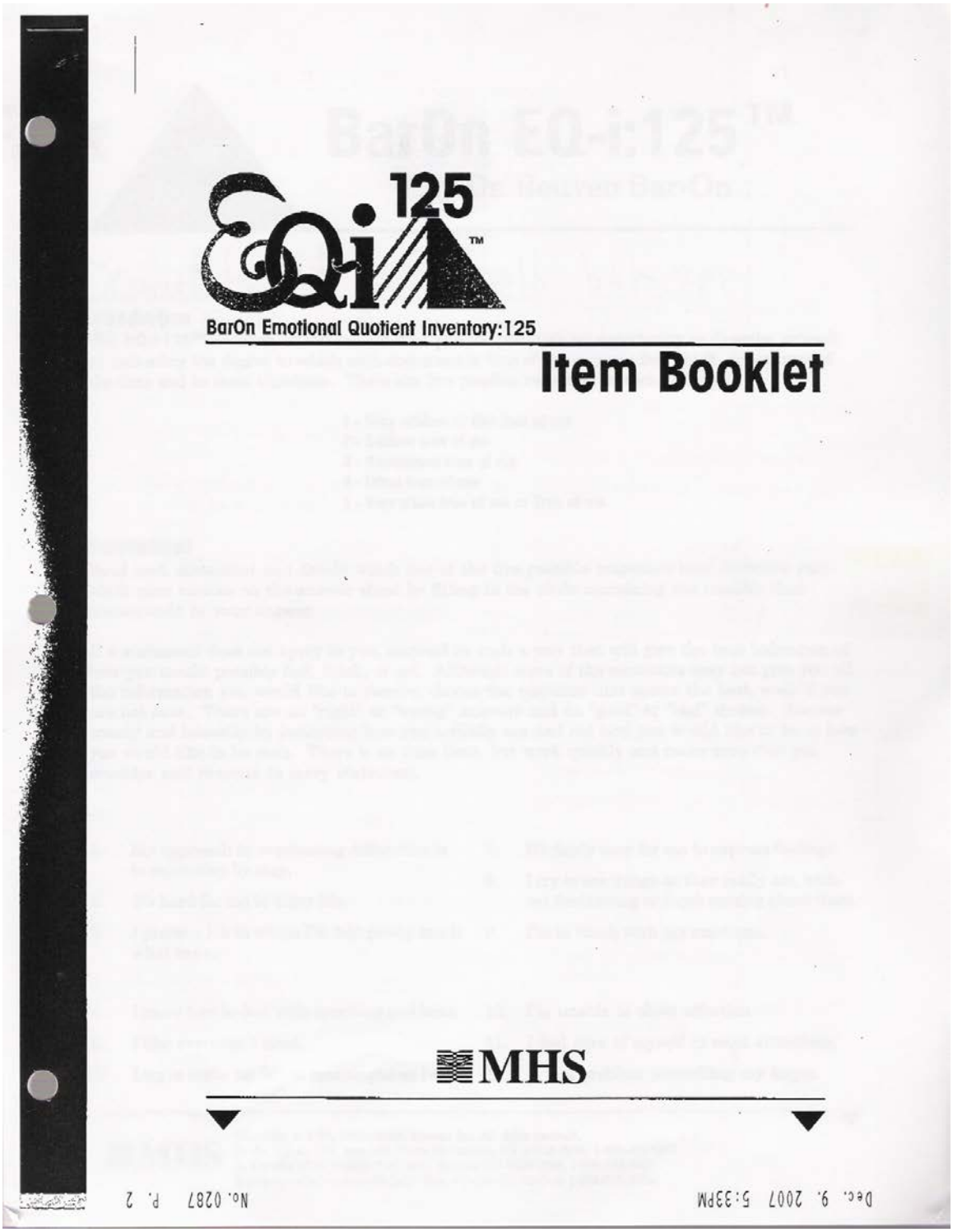
The online survey, called the EQ-i will take approximately 30 minutes to complete 125 items. Both the school district and your principal have approved your participation in this study. The results of your survey will remain confidential. They will not be shared with the school district nor your supervisor and/or principal. Results of your online survey will, however, be made available to you personally upon completion. As with any credible educational research, you have the right to refuse participation in this research.

Please respond to David Rust by phone or by email if you are willing to participate.

Sincerely,

Appendix F

EQ-I 125 – Emotional intelligence instrument



BarOn EQ-i:125™

by Dr. Reuven Bar-On

Introduction

The EQ-i:125™ consists of statements that provide you with an opportunity to describe yourself by indicating the degree to which each statement is true of the way you feel, think, or act most of the time and in most situations. There are five possible responses to each sentence.

1 - Very seldom or Not true of me
2 - Seldom true of me
3 - Sometimes true of me
4 - Often true of me
5 - Very often true of me or True of me

Instructions

Read each statement and decide which *one* of the five possible responses best describes you. Mark your choices on the answer sheet by filling in the circle containing the number that corresponds to your answer.

If a statement does not apply to you, respond in such a way that will give the best indication of how you *would* possibly feel, think, or act. Although some of the sentences may not give you all the information you would like to receive, choose the response that seems the best, even if you are not sure. There are no "right" or "wrong" answers and no "good" or "bad" choices. Answer openly and honestly by indicating how you actually are and *not* how you would like to be or how you would like to be seen. There is no time limit, but work quickly and make sure that you consider and respond to *every* statement.

1. My approach in overcoming difficulties is to move step by step.
2. It's hard for me to enjoy life.
3. I prefer a job in which I'm told pretty much what to do.
4. I know how to deal with upsetting problems.
5. I like everyone I meet.
6. I try to make my life as meaningful as I can.
7. It's fairly easy for me to express feelings.
8. I try to see things as they really are, without fantasizing or daydreaming about them.
9. I'm in touch with my emotions.
10. I'm unable to show affection.
11. I feel sure of myself in most situations.
12. It is a problem controlling my anger.

1 - Very seldom or Not true of me
2 - Seldom true of me
3 - Sometimes true of me
4 - Often true of me
5 - Very often true of me or True of me

13. It's difficult for me to begin new things.
14. When faced with a difficult situation, I like to collect all the information about it that I can.
15. I like helping people.
16. It's hard for me to smile.
17. I'm unable to understand the way other people feel.
18. When working with others, I tend to rely more on their ideas than my own.
19. I believe that I can stay on top of tough situations.
20. I really don't know what I'm good at.
21. I'm unable to express my ideas to others.
22. It's hard for me to share my deep feelings with others.
23. I lack self-confidence.
24. I'm optimistic about most things I do.
25. When I start talking, it is hard to stop.
26. It's hard for me to make adjustments in general.
27. I like to get an overview of a problem before trying to solve it.
28. It doesn't bother me to take advantage of people, especially if they deserve it.
29. I'm a fairly cheerful person.
30. I prefer others to make decisions for me.
31. I can handle stress, without getting too nervous.
32. I have good thoughts about everyone.
33. It's hard for me to understand the way I feel.
34. In the past few years, I've accomplished little.
35. When I'm angry with others, I can tell them about it.
36. I have had strange experiences that can't be explained.
37. It's easy for me to make friends.
38. I have good self-respect.
39. My impulsiveness creates problems.
40. It's difficult for me to change my opinion about things.
41. I'm good at understanding the way other people feel.
42. When facing a problem, the first thing I do is stop and think.

1 - Very seldom or Not true of me
2 - Seldom true of me
3 - Sometimes true of me
4 - Often true of me
5 - Very often true of me or True of me

43. Others find it hard to depend on me.
44. I am satisfied with my life.
45. It's hard for me to make decisions on my own.
46. I don't hold up well under stress.
47. I don't do anything bad in my life.
48. I don't get enjoyment from what I do.
49. It's hard to express my intimate feelings.
50. People don't understand the way I think.
51. I generally hope for the best.
52. My friends can tell me intimate things about themselves.
53. I don't feel good about myself.
54. People tell me to lower my voice in discussions.
55. It's easy for me to adjust to new conditions.
56. When trying to solve a problem, I look at each possibility and then decide on the best way.
57. I would stop and help a crying child find his or her parents, even if I had to be somewhere else at the same time.
58. I'm fun to be with.
59. I'm aware of the way I feel.
60. I feel that it's hard for me to control my anxiety.
61. Nothing disturbs me.
62. I don't get that excited about my interests.
63. When I disagree with someone, I'm able to say so.
64. I tend to fade out and lose contact with what happens around me.
65. I don't get along well with others.
66. It's hard for me to accept myself just the way I am.
67. I care what happens to other people.
68. I'm impatient.
69. I'm able to change old habits.
70. It's hard for me to decide on the best solution when solving problems.
71. If I could get away with breaking the law in certain situations, I would.
72. I get depressed.

1 - Very seldom or Not true of me
2 - Seldom true of me
3 - Sometimes true of me
4 - Often true of me
5 - Very often true of me or True of me

73. I know how to keep calm in difficult situations.
74. I have not told a lie in my life.
75. I'm generally motivated to continue, even when things get difficult.
76. I try to continue and develop those things that I enjoy.
77. It's hard for me to say "no" when I want to.
78. I get carried away with my imagination and fantasies.
79. My close relationships mean a lot to me and to my friends.
80. I'm happy with the type of person I am.
81. I have strong impulses that are hard to control.
82. It's generally hard for me to make changes in my daily life.
83. Even when upset, I'm aware of what's happening to me.
84. In handling situations that arise, I try to think of as many approaches as I can.
85. I'm able to respect others.
86. I'm not that happy with my life.
87. I'm more of a follower than a leader.
88. It's hard for me to face unpleasant things.
89. I have not broken a law of any kind.
90. I enjoy those things that interest me.
91. It's fairly easy for me to tell people what I think.
92. I tend to exaggerate.
93. I'm sensitive to the feelings of others.
94. I have good relations with others.
95. I feel comfortable with my body.
96. I'm impulsive.
97. It's hard for me to change my ways.
98. I think it's important to be a law-abiding citizen.
99. I enjoy weekends and holidays.
100. I generally expect things will turn out all right, despite setbacks from time to time.
101. I tend to cling to others.
102. I believe in my ability to handle most upsetting problems.

1 - Very seldom or Not true of me
2 - Seldom true of me
3 - Sometimes true of me
4 - Often true of me
5 - Very often true of me or True of me

103. I have not been embarrassed for anything that I've done.
104. I try to get as much as I can out of those things that I enjoy.
105. Others think that I lack assertiveness.
106. I can easily pull out of daydreams and tune into the reality of the immediate situation.
107. People think that I'm sociable.
108. I'm happy with the way I look.
109. It's hard for me to describe my feelings.
110. I've got a bad temper.
111. I generally get stuck when thinking about different ways of solving problems.
112. It's hard for me to see people suffer.
113. I like to have fun.
114. I seem to need other people more than they need me.
115. I get anxious.
116. I don't have bad days.
117. I avoid hurting other people's feelings.
118. I don't have a good idea of what I want to do in life.
119. It's difficult for me to stand up for my rights.
120. It's hard for me to keep things in the right perspective.
121. I don't keep in touch with friends.
122. I tend to explode with anger easily.
123. It would be hard for me to adjust if I were forced to leave my home.
124. Before beginning something new, I usually feel that I'll fail.
125. Looking at both my good points and bad points, I feel good about myself.

Occupational Codes

Select the job title or job description below that best describes your present or most recent occupation, and write the five digit code for that occupation on the EQ-i:125™ Answer Sheet under "Occupation." Because it is impossible to list every possible job, we have tried to list as broad a number of choices as possible. If your occupation is not listed, select the major category that best fits your occupation and fill in the code for "Other" in the "Occupation" field on the answer sheet. **Filling in the occupational code is optional.**

Public Officials, Administrators, Elected Reps	
Politician	968-00
Mayor	968-01
Councillor	968-02
Comptroller	969-00
Civil Servant	970-00
Other	967-00
Business Management and Related Occupations	
Management Consultant	156-00
Management – Upper	157-00
Production Planning Manager/Supervisor	159-00
Human Resource Specialist	112-01
Financial Management	206-00
Accountant	200-00
Actuary	712-01
Auditor	158-00
Collections	143-05
Other	160-00
Engineers, Surveyors, Landscapers, and Architects	
Architect	800-00
Surveyor	795-00
Urban Planner	796-00
Civil Engineer	797-00
Landscaper	798-00
Other	799-00
Computer, Mathematical, and Research Occupations	
Computer Programmer	606-00
Systems Analyst	356-00
Technical Support Specialist	596-00
Network Administrator	597-00
Hardware Developer	598-00
Statistician	712-02
Research Assistant	591-00
Other	599-00
Natural Scientists	
Biologist	600-00
Chemist	603-00
Physicist	615-00
Agricultural Scientist	700-00
Geologist	703-00
Other	704-00
Social Scientists	
Psychologist (nonclinical)	709-00
Economist	153-00
Sociologist	710-00
Other	711-00
Education	
Teacher–Elementary Level	906-00
Teacher–High School Level	912-00
School Principal–Elementary or Secondary Level	313-00
College Instructor	913-00
University Professor	915-00
Corporate Trainer	903-00
Other	905-00
Medical and Health Related Professions	
Dentist	650-00
Dental Hygienist	651-00
Medical Technician	653-00
Nurse	656-00
Pharmacist	659-00
Physician/Surgeon	662-00
Physical Therapist	665-00
Dietician/Nutritionist	667-00
Psychiatrist/Clinical Psychologist	668-00
Veterinarian	671-00
Other	674-00

Appendix G

EQ-I Individual Summary Report for Teachers

BarOn Emotional Quotient Inventory

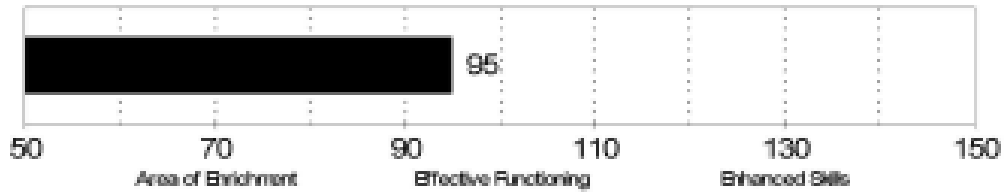
By Reuven Bar-On, Ph.D.

Individual Summary Report

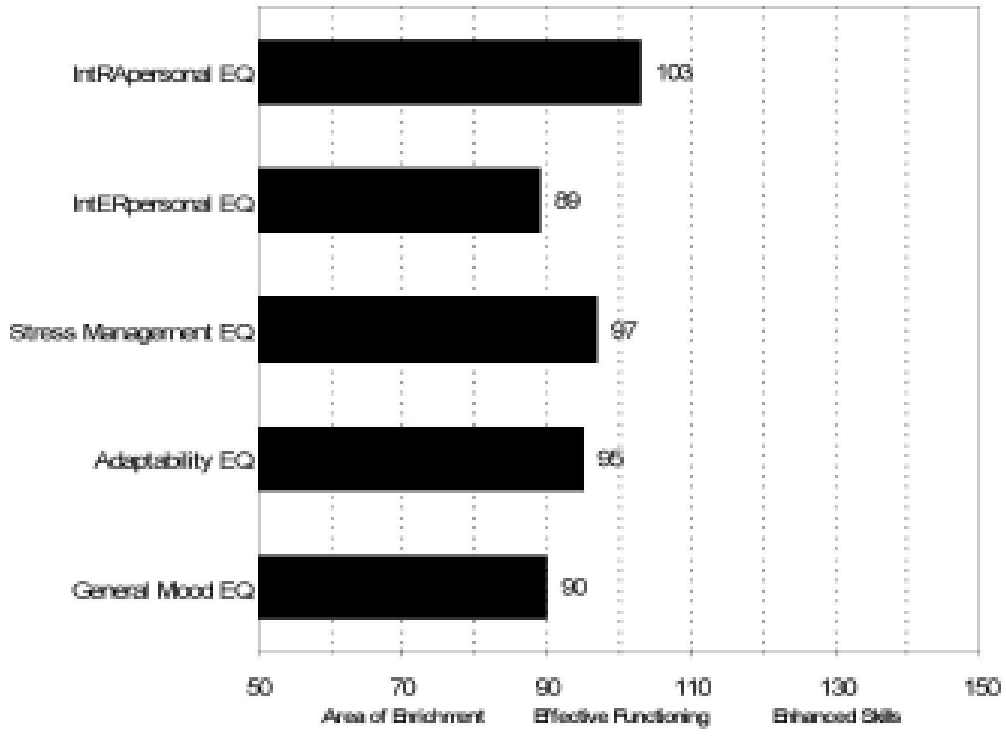
Name:	[redacted]
ID:	
Age:	[redacted]
Gender:	Female
Admin. Date:	June 10, 2009 (Online)
Duration:	31 Minutes 18 Seconds

The information given in this report should be used as a means of generating hypotheses and as a guide to assessment. Higher standard scores are associated with greater levels of emotional intelligence and better performance. 100 represents effective emotional functioning. Scores greater than 100 represent good emotional functioning, and scores of less than 100 indicate areas that may be improved. (The value -99 may appear if scores are incomputable due to missing item responses).

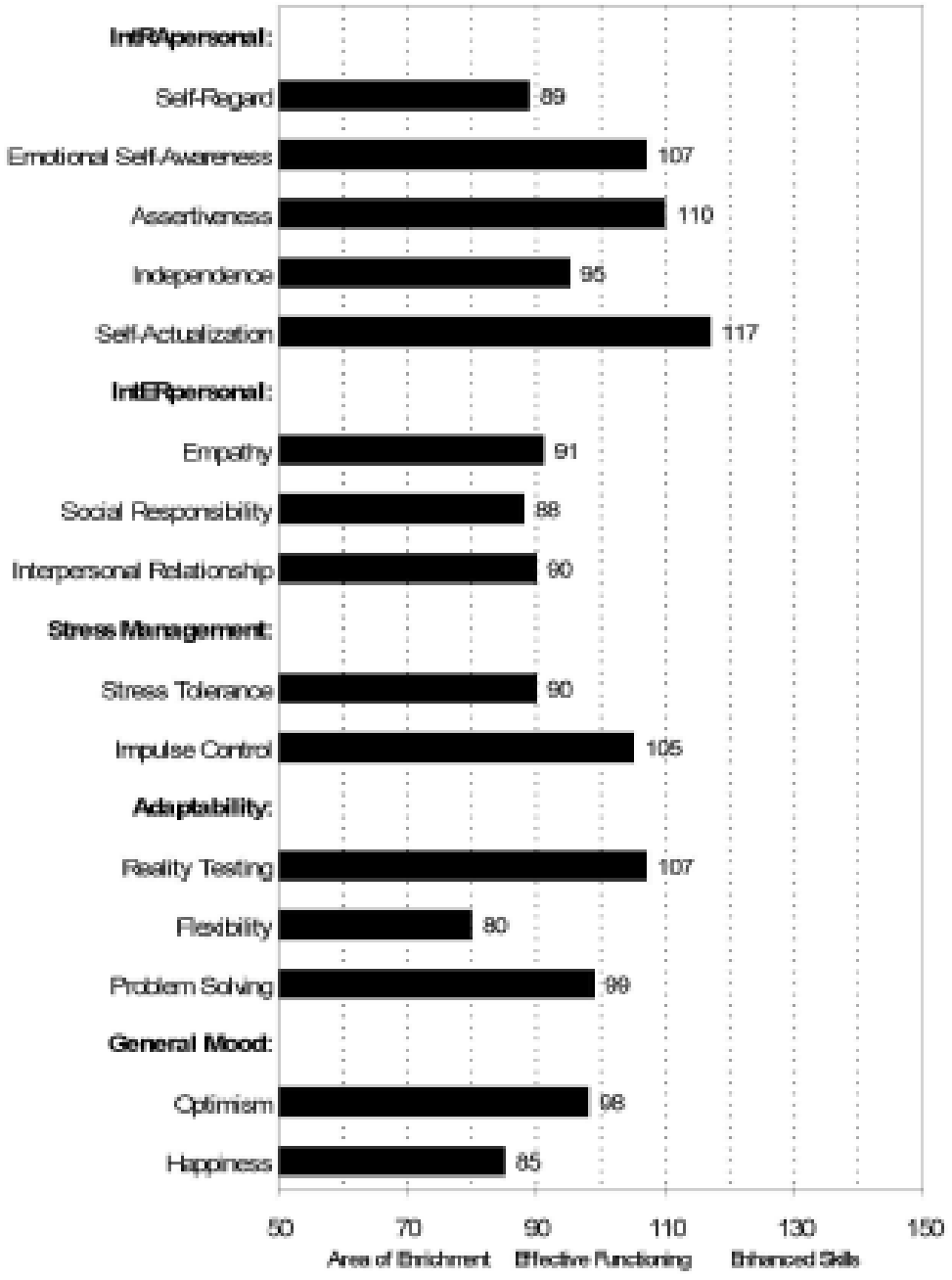
Total EQ



Composite Scales



Content Subscales



Validity Indicators

Validity Comment:

The validity indicators are all in the acceptable range suggesting valid responses and results that are not unduly influenced by response style.

Inconsistency Index: 3.3
Impression: Positive = 110
Correction: Type I = -1.86, Type II = -2.48, Type III = -1.86, Type IV = -2.48, Type V = -2.07

Positive Impression (PI) Score

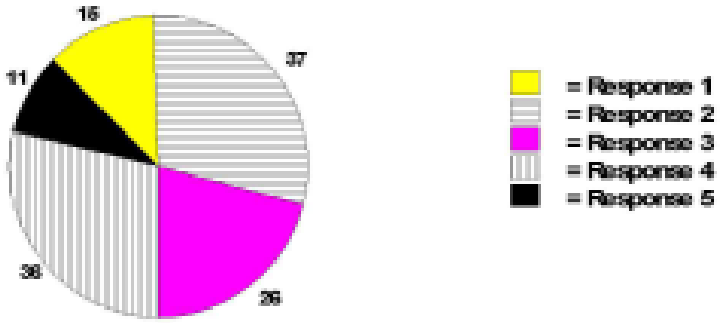
The scores obtained on the validity scales indicate a realistic and accurate self-appraisal which is not overly positive or negative.

Score Summary	Adjusted Score	Unadjusted Score	Guideline
Inconsistency Index		3	OK
Positive Impression		110	OK
TOTAL EQ:	**95**	**97**	**Average**
INTRAPERSONAL:	**103**	**105**	**Average**
Self-Regard	89	91	Low
Emotional Self-Awareness	107	109	Average
Assertiveness	110	110	High
Independence	95	95	Average
Self-Actualization	117	119	High
INTERPERSONAL:	**89**	**91**	**Low**
Empathy	91	91	Average
Social Responsibility	88	90	Low
Interpersonal Relationship	90	92	Average
STRESS MANAGEMENT:	**97**	**100**	**Average**
Stress Tolerance	90	93	Average
Impulse Control	105	106	Average
ADAPTABILITY:	**95**	**97**	**Average**
Reality Testing	107	109	Average
Flexibility	80	82	Low
Problem Solving	99	101	Average
GENERAL MOOD:	**90**	**92**	**Average**
Optimism	98	100	Average
Happiness	85	87	Low

Norm Type: General nonspecific

Item	Response	Item	Response	Item	Response	Item	Response	Item	Response
1	5	28	2	55	2	82	2	109	2
2	3	29	4	56	4	83	4	110	2
3	3	30	1	57	4	84	4	111	2
4	3	31	3	58	4	85	4	112	4
5	2	32	3	59	4	86	2	113	4
6	5	33	1	60	3	87	2	114	3
7	4	34	1	61	2	88	3	115	2
8	4	35	3	62	1	89	4	116	4
9	4	36	1	63	5	90	5	117	4
10	2	37	1	64	2	91	4	118	1
11	4	38	4	65	3	92	2	119	2
12	2	39	2	66	2	93	3	120	2
13	3	40	4	67	3	94	4	121	2
14	4	41	4	68	2	95	3	122	2
15	4	42	3	69	3	96	2	123	4
16	1	43	1	70	2	97	3	124	2
17	2	44	4	71	1	98	4	125	4
18	2	45	2	72	5	99	4		
19	4	46	2	73	3	100	4		
20	1	47	4	74	2	101	3		
21	1	48	2	75	5	102	4		
22	2	49	2	76	5	103	3		
23	3	50	3	77	3	104	5		
24	4	51	4	78	1	105	1		
25	2	52	5	79	5	106	5		
26	2	53	2	80	3	107	3		
27	4	54	1	81	2	108	3		

5 = Very Often true of me or true of me, 4 = Often true of me, 3 = Sometimes true of me, 2 = Seldom true of me, 1 = Very Seldom true or not true of me, 0 = Omitted Item



References

Ang, R. P. (2005). Development and validation of the teacher-student relationship inventory using exploratory and confirmatory factor analysis. *Journal of Experimental Education*, *74*(1), 55-73.

Bar-On, R. (1997a). *The Emotional quotient inventory (EQ-i): A test of emotional Intelligence*. Toronto, Canada Multi-Health Systems, Inc.

Bar-On, R. (1997b). *The Emotional quotient inventory (EQ- i): Technical manual*. Toronto, Canada: Multi-Health Systems, Inc.

Bar-On, R. (Ed.). (2004). *The Bar-On emotional quotient inventory (EQ-i): Rationale, description, and summary of psychometric properties.* Hauppauge, NY: Nova Science Publishers.

Bar-On, R. (2005). Emotional intelligence and subjective wellbeing. Unpublished manuscript.

Bar-On, R., & Handley, R. (2003). *The Bar-On EQ-360*. Toronto, Canada: Multi-Health Systems.

Bar-On, R., Maree, J. G., & Elias, M. J. (Eds.). (2007). Educating people to be emotionally intelligent. Westport Connecticut: Praeger.

Bar-On, R., & Parker, J. D. A. (Eds.). (2000). *Emotional and social intelligence: Insights from the emotional quotient inventory (EQ-i)*. San Franscisco: Jossey-Bass.

Barton, P. E. (2004). Widens the gap persists. *Educational leadership*, *62*(3), 8-13.

Bechara, A., & Bar-On, R. (In Press). The neurological substrates of emotional and Social intelligence: Evidence from patients with focal brain lesions. In J. T. Cacioppo & G. G. Bernston (Eds.), Essays in social neuroscience. Cambridge, MA: MIT Press.

Boyatzis, R. E., Goleman, D., & Group, H. M. (1999). Emotional Competence Inventory 2.0 Self-Version; Emotional Competence Inventory 2.0 360 Version; Emotional Competence Inventory 2.0 Scoring Instructions (pp. Downloaded by special permission from Sala/BOSTON/US/HAYGROUP@HAYGROUP for the purpose of research).

Brooks, R. (1996). Creating a positive school climate: Strategies for fostering self-esteem, motivation, and resilience. In J. Cohen (Ed.), *Educating minds and hearts: Social emotional learning and the passage into adolescence* (pp.61-73). New York, NY: Columbia Teachers College Press.

Brophy, J. E., & Good, T. L. (1974). Teacher-Student Relationships: Causes and Consequences. New York: Holt, Rinehart and Winston.

Brown, F.W., Bryant, S.E., Reilly, M.D., (2006). Does emotional intelligence – as measured by the EQI – influence transformational leadership and/or desirable outcomes? *Leadership & Organization Development Journal*, *27*(5), 330 - 351.

Campbell, R. J., Kyriakides, L., Muijs, R. D., & Robinson, W. (2003). Differential teacher effectiveness: towards a model for research and teacher appraisal. *Oxford Review of Education*, *29*(3), 362.

Carmeli, A., & Josman, Z. E. (2006). The relationship among emotional intelligence, task performance, and organizational citizenship behaviors. *Human Performance*, *19*(4), 403-419.

Coleman, J. S. (1966). Equality of Educational Opportunity. Washington, DC: United States Department of Education.

Darling-Hammond, L. (1997). Doing What Matters Most: Investing in Quality Teaching. New York: National Commission on Teaching & America's Future.

Dawda, D., & Hart, S.D. (2000). Assessing emotional intelligence: Reliability and validity of the Bar-On Emotional Quotient Inventory (EQ-i) in university students. *Personality and Individual Differences*, *28*(4), 797-812.

Day, A.L., & Carroll, S.A. (2008). Faking emotional intelligence (EI):Comparing response distortion on ability and trait-based EI measures. *Journal of Organizational Behavior*, *29*(6), 761-784.

Dearborn, K. (2002). Studies in emotional intelligence redefine our approach to leadership development. *Public Personnel Management*, *31*(4), 523-526.

Drew, T. L. (2006). *A relationship with emotional intelligence and student teacher performance.* Unpublished Dissertation, University of Nebraska, Lincoln.

Dulewicz, V., & Higgs, M. (2003). Leadership at the top: the need for emotional intelligence in organizations. *International Journal of Organizational Analysis*, *11*(3), 193-210.

Education Trust. (2005). Stalled in secondary: a look at student achievement since the no Child left behind act (Publication). Retrieved July 20, 2008, from Education Trust: http://www2.edtrust.org/NR/rdonlyres/77670E50-188F-4AA8-8729-555115389E18/0/StalledInSecondary.pdf

Fabio, A. D., & Palazzeschi, L. (2008). Emotional intelligence and self-efficacy in a sample of Italian high school teachers. *School Behavior and Personality, 36*(3), 315-326.

Finegan, J. E. (1998). Measuring emotional intelligence: where we are today. Paper presented at the Annual meeting of the Mid-south educational research Association.

Gardner, H. (1983). *Frames of mind: the theory of multiple intelligences*. New York: Basic Books.

Gardner, H. (1998). A Multiplicity of Intelligences. *Scientific American Presents*, 18-23.

Geher, G. (Ed.). (2004). *Measuring emotional intelligence: common ground and controversy*. Hauppage, New York: Nova Science Publishers.

Goleman, D. (1995). *Emotional Intelligence: Why it can matter more than IQ*. New York: Bantam.

Goleman, D. (1998). What makes a leader? *Harvard Business Review*, *76*(6), 93-102.

Grubb III, W. L., McDaniel, M. (2007). The fakability of Bar-On's emotional quotient short form: Catch me if you can. *Human Performance. 20*(1), 43-59.

Hapal, M. (n.d.). Bar-On emotional intelligence-inventory: short (test evaluation). Retrieved March 29. 2014, from Academia.edu: https://www.academia.edu/5514911/Bar-On_Emotional_Intelligence-Inventory_Short_Test_Evaluation

Hargreaves, A. (2000). Mixed emotions: Teachers perceptions of their interactions with students. *Teaching and Teacher Education*, *16*(8), 811–826.

Helm, C. (2007). Teacher dispositions affecting self-esteem and student performance. *Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *80*(3), 109-110.

Klem, A. M., & Connell. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*, *74*(7), 262-275.

Martin, A. (2006). The relationship between teachers' perceptions of student motivation and engagement and teachers' enjoyment of and confidence in teaching. *Asia-Pacific Journal of Teacher Education*, *34*(1), 73–93.

Marzano, R. (2007). *The art and science of teaching*. Alexandria, Va: ASCD.

Matthews, G., Roberts, R. D., & Zeidner, M. (2003). Development of emotional intelligence: a skeptical-but not dismissive-perspectives. *Human Development*, *46*, 109-114.

Mayer, J., & Salovey, P. (1993). Intelligence of emotional intelligence. *Intelligence*, *17*, 433-442.

Mayer, J., & Salovey, P. (1995). Emotional intelligence in the construction and regulation of feelings. *Applied and Preventive Psychology*, *4*, 197-208.

Mayer, J., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional development and emotional intelligence: implications for education*. New York: Jossey-Bass.

Mayer, J., Salovey, P., & Caruso, D. (1999). *MSCEIT item booklet (research version 1.1)*. Toronto: MHS publishers.

McMillan, J. H., & Schumacher, S. (2006). *Research in education. Evidence-based inquiry* (6th ed.). Boston, Ma: Allyn and Bacon.

McNulty, R. J., & Quaglia, R. J. (2007). Rigor, relevance, and relationships. *School Administrator*, *64*(8), 6.

Meier, K. J., Mastracci, S. H., & Wilson, K. (2006). Gender and emotional labor in public organizations: an empirical examination of the link to performance. *Public administration review*, *66*(6), 899-909.

National Association of Secondary School Principals. (2004). *Breaking ranks ii: Strategies for leading high school reform.* Reston, Va.

National Commission on Excellence in Education. (1983). *A nation at risk - The imperative for educational reform*. Washington, DC: Government Printing Office.

Nicholls, S., Wegener, M., Bay, D., & Cook, G.L. (2012) Emotional intelligence tests: Potential impacts on the hiring process for accounting students. *Accounting Education, 21*(1), 75-95.

Othman, A. K., Abdullah, H. S., & Ahmad, J. (2008). Emotional intelligence, emotional labor and work effectiveness in service organizations: a proposed model. *Vision-the Journal of business perspective*, *12*(1), 31-42.

Perez, J.C., Petrides, K.V., & Furnham, A. (2005). Measuring trait emotional intelligence. In R. Schulze & R.D. Roberts (Eds.) *International handbook of emotional intelligence.* Cambridge, MA: Hogrefe & Huber.

Plake, B., & Impara, J. (Eds.). (1999). Supplement to the 13th mental measurement yearbook. Lincoln, Nebraska: Buros Institute for mental measurement.

Morgan, S.E., Reichert, T., & Harrison, T.R. (2002). *From numbers to words: Reporting statistical results for the social sciences.* Boston, MA: Allyn & Bacon.

Rozell, E. J., Pettijohn, C. E., & Parker, R. S. (2006). Emotional intelligence and dispositional activity as predictors of performance in salespeople. *Journal of Marketing Theory and Practice*, *14*(2), 113-124.

Sahin-Baltaci, H.,& Demir, Kamile. (2012). Pre-service classroom teachers' emotional intelligence and anger expression styles. *Education Sciences: Theory and Practice, 12*(4), 2422-2428.

Salovey, P., Brackett, M., & Mayer, J. (Eds.). (2007). *Emotional intelligence: Key readings on the mayer and salovey model*. New York: Dude.

Salovey, P., & Mayer, J. (1990). Emotional intelligence. *Imagination, Cognition, and Personality*, *9*, 185-211.

Spielberger, C. (Ed.). (2004). Encyclopedia of applied psychology: Academic press.

Stottlemyer, B. G. (2002). *An examination of emotional intelligence: its relationship to academic achievement and the implications for education.* Texas A&M, Corpus Christi.

Van Rooy, D., & Viswesvaran, C. (2004). Emotional intelligence: a meta-analytic investigation of predictive validity and nomological net. *Journal of Vocational Behavior*, *65*, 71-95.

Wasylyshyn, K. M., Gronsky, B., & Haas, J. W. (2006). Tigers, stripes, and behavior change: survey results of a commissioned coaching program. *Consulting Psychology Journal: Practice and Research*, *58*(2), 65-81.

Welch, J., & Welch, S. (1998). Hiring is Hard Work: The lessons we (re)learned recently from two job applicants we almost employed. (July 7, 2008). Retrieved from http://www.businessweek.com/magazine/content/08_27/b4091080522869.htm?chan=magazine+channel_opinion

Whitfield, P. T., & Klug, B. J. (2004). Teachers as Healers: 21st-Century Possibility? Or Necessity*. Multicultural Perspectives*, *6*(1), 43-50.

Winters, C, (2009). Emotional intelligence and teaching. In J. Helfer (Ed.), *Proceedings of the 2004-2005 Midwest Philosophy of Education Society*. Bloomington, IN: Authorhouse.

Worley, D., Titsworth, S., Worley, D. W., & Cornett-DeVito, M. (2007). Instructional communication confidence: lessons learned from award-winning teachers. *Communication studies*, *58*(2), 207-222.

Zeidner, M., Matthews, G., & Roberts, R. (2001). Slow down, you move too fast: Emotional intelligence remains in "elusive" intelligence. *Emotion, 1*(3), 265-275.

Zeidner, M., Matthews, G., Roberts, R. (2004). Emotional intelligence in the workplace: A critical review. *Applied Psychology*: *An International Review*, *53*(3), 371-99.

April 17, 2014

Vita

David A. Rust

R. A. Jones Middle School
Boone County Schools
Florence, KY 41042
Office Phone: 859-282-4610
Office Email: david.rust@boone.kyschools.us

Professional Experience

Principal, Rector A. Jones Middle School, Florence, KY. 2007 – present
Principal, Ludlow Middle School, Ludlow, KY. 2003-2007
Assistant Principal, Robert Scott High School, Taylor Mill, KY. 2001-2003
High School Teacher, Robert Scott High School, Taylor Mill, KY. 1995-2001

Education

B.A., Secondary Social Studies Education, 1995, Northern Kentucky University, Highland Heights, KY
M.A., Instructional Leadership, 2001, Northern Kentucky University, Highland Heights, KY
Ed.D., Educational Leadership, Expected 2014, University of Kentucky, Lexington, KY

Honors and Awards

Outstanding Administrator of the Year, Kentucky Music Educators Association, March 2014.

Association Memberships

- Association for Supervision and Curriculum Development
- National Association of Secondary School Principals
- Kentucky Association of School Administrators
- Northern Kentucky Association of Secondary School Principals

Professional Experience

Northern Kentucky University, Teacher Education Committee, Member, 2008-present.

Northern Kentucky University, Special Education Advisory Committee, Member, 2013-present.

Professional Presentations

Invited Presentation: *M.S. - H.S. - College Collaboration to Promote ILP, EPAS and College Readiness.* American College Test (ACT), College and Career Readiness Workshop, Louisville, KY, November 17, 2010.

Publications and Papers

Rust, D.A., (2006). *How can school leaders affect increased student achievement through the evaluation of teachers?* Paper presented at the 2nd International Symposium on Education Reform, University of Jyväskylä, Finland, June 15, 2006.

References

Dr. Lars Björk, Professor, Department of Educational Leadership Studies, University of Kentucky, Lexington, KY, 40506. Tel: 859-257-2450. Email: lars.bjork@uky.edu

Ms. Regina Brownfield, Assistant Principal, R.A. Jones Middle School, Florence, KY, 41042. Tel: 859-282-4610. Email: regina.brownfield@boone.kyschools.us

Ms. Karen Cheser, Chief Academic Officer, Boone County Schools, Florence, KY 41042. Tel: 859-282-3196. Email: karen.cheser@boone.kyschools.us

Dr. Randy Poe, Superintendent of Schools, Boone County Schools, Florence, KY, 41042. Tel: 859-282-2375. Email: randy.poe@boone.kyschools.us